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707                     712                     717                     722

ata gct gcc ttg ctc tct gtc atg ctt cag cct tac atg ccc acg gtt       2323
Ile Ala Ala Leu Leu Ser Val Met Leu Gln Pro Tyr Met Pro Thr Val
723                 728                 733                 738

agt gcc aca atc cag gcc cag ctg cag ctc cca cct cca gcc tgc agt       2371
Ser Ala Thr Ile Gln Ala Gln Leu Gln Leu Pro Pro Pro Ala Cys Ser
739                 744                 749                 754

atc ctg ctg aca aac ttc ctg tgt acc tta cca gca gga cac cag att       2419
Ile Leu Leu Thr Asn Phe Leu Cys Thr Leu Pro Ala Gly His Gln Ile
755                 760                 765                 770

ggc aca gtc agt ccc ttg ttc caa aaa ttg gaa aat gac cag att gaa       2467
Gly Thr Val Ser Pro Leu Phe Gln Lys Leu Glu Asn Asp Gln Ile Glu
771                 776                 781                 786

agt tta agg cag cgc ttt gga ggg ggc cag gca aaa acg tcc ctg aag       2515
Ser Leu Arg Gln Arg Phe Gly Gly Gly Gln Ala Lys Thr Ser Leu Lys
787                 792                 797                 802

cca gca gtt gta gag act gtt aca aca gcc aag cca cag cag ata caa       2563
Pro Ala Val Val Glu Thr Val Thr Thr Ala Lys Pro Gln Gln Ile Gln
803                 808                 813                 818

gcg ctg atg gat gaa gtg aca aaa caa gga aac att gtc cga gaa ctg       2611
Ala Leu Met Asp Glu Val Thr Lys Gln Gly Asn Ile Val Arg Glu Leu
819                 824                 829                 834

aaa gca caa aag gca gac aag aac gag gtt gct gcg gag gtg gcg aaa       2659
Lys Ala Gln Lys Ala Asp Lys Asn Glu Val Ala Ala Glu Val Ala Lys
835                 840                 845                 850

ctc ttg gat cta aag aaa cag ttg gct gta gct gag ggg aaa ccc cct       2707
Leu Leu Asp Leu Lys Lys Gln Leu Ala Val Ala Glu Gly Lys Pro Pro
851                 856                 861                 866

gaa gcc cct aaa ggc aag aag aaa aag taa a agaccttggc tcatagaaag       2758
Glu Ala Pro Lys Gly Lys Lys Lys Lys  *
867                 872

tcactttaat agatagggac agtaataaat aaatgtacaa tctctatata caagctgaga     2818

cctttccttt tgtctactcc aagccttccc cctgcgtatg tgggattgag ggtcacatca     2878

ttggcactag tgagagggta gtcagtagcc acttctggga aaggtgggta gtgtggccca     2938

agtgggggac tgatgctccc aagtcgacgc ggccggatat ttaatagtag tagtcgaccc     2998

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                                                         Met Arg
                                                         1

ctg ttc gtg agt gat ggc gtc ccg ggt tgc ttg ccg gtg ctg gcc gcc        163
Leu Phe Val Ser Asp Gly Val Pro Gly Cys Leu Pro Val Leu Ala Ala
    3                   8                  13                  18

gcc ggg aga gcc cgg ggc aga gca gag gtg ctc atc agc act gta ggc        211
Ala Gly Arg Ala Arg Gly Arg Ala Glu Val Leu Ile Ser Thr Val Gly
19                  24                  29                  34

ccg gaa gat tgt gtg gtc ccg ttc ctg acc cgg cct aag gtc cct gtc        259
Pro Glu Asp Cys Val Val Pro Phe Leu Thr Arg Pro Lys Val Pro Val
35                  40                  45                  50

ttg cag ctg gat agc ggc aac tac ctc ttc tcc act agt gca atc tgc        307
Leu Gln Leu Asp Ser Gly Asn Tyr Leu Phe Ser Thr Ser Ala Ile Cys
51                  56                  61                  66

cga tat ttt ttt ttg tta tct ggc tgg gag caa gat gac ctc act aac        355
Arg Tyr Phe Phe Leu Leu Ser Gly Trp Glu Gln Asp Asp Leu Thr Asn
67                  72                  77                  82

cag tgg ctg gaa tgg gaa gcg aca gag ctg cag cca gct ttg tct gct        403
Gln Trp Leu Glu Trp Glu Ala Thr Glu Leu Gln Pro Ala Leu Ser Ala
83                  88                  93                  98

gcc ctg tac tat tta gtg gtc caa ggc aag aag ggg gaa gat gtt ctt        451
Ala Leu Tyr Tyr Leu Val Val Gln Gly Lys Lys Gly Glu Asp Val Leu
99                  104                 109                 114

ggt tca gtg cgg aga gcc ctg act cac att gac cac agc ttg agt cgt        499
Gly Ser Val Arg Arg Ala Leu Thr His Ile Asp His Ser Leu Ser Arg
115                 120                 125                 130

cag aac tgt cct ttc ctg gct ggg gag aca gaa tct cta gcc gac att        547
Gln Asn Cys Pro Phe Leu Ala Gly Glu Thr Glu Ser Leu Ala Asp Ile
131                 136                 141                 146

gtt ttg tgg gga gcc cta tac cca tta ctg caa gat ccc gcc tac ctc        595
Val Leu Trp Gly Ala Leu Tyr Pro Leu Leu Gln Asp Pro Ala Tyr Leu
147                 152                 157                 162

cct gag gag ctg agt gcc ctg cac agc tgg ttc cag aca ctg agt acc        643
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Pro Glu Glu Leu Ser Ala Leu His Ser Trp Phe Gln Thr Leu Ser Thr
163                 168                 173                 178

cag gaa cca tgt cag cga gct gca gag act gta ctg aaa cag caa ggt       691
Gln Glu Pro Cys Gln Arg Ala Ala Glu Thr Val Leu Lys Gln Gln Gly
179                 184                 189                 194

gtc ctg gct ctc cgg cct tac ctc caa aag cag ccc cag ccc agc ccc       739
Val Leu Ala Leu Arg Pro Tyr Leu Gln Lys Gln Pro Gln Pro Ser Pro
195                 200                 205                 210

gct gag gga agg gct gtc acc aat gag cct gag gag gag gag ctg gct       787
Ala Glu Gly Arg Ala Val Thr Asn Glu Pro Glu Glu Glu Glu Leu Ala
211                 216                 221                 226

acc cta tct gag gag gag att gct atg gct gtt act gct tgg gag aag       835
Thr Leu Ser Glu Glu Glu Ile Ala Met Ala Val Thr Ala Trp Glu Lys
227                 232                 237                 242

ggc cta gaa agt ttg ccc ccg ctg cgg ccc cag cag aat cca gtg ttg       883
Gly Leu Glu Ser Leu Pro Pro Leu Arg Pro Gln Gln Asn Pro Val Leu
243                 248                 253                 258

cct gtg gct gga gaa agg aat gtg ctc atc acc agt gcc ctc cct tac       931
Pro Val Ala Gly Glu Arg Asn Val Leu Ile Thr Ser Ala Leu Pro Tyr
259                 264                 269                 274

gtc aac aat gtc ccc cac ctt ggg aac atc att ggt tgt gtg ctc agt       979
Val Asn Asn Val Pro His Leu Gly Asn Ile Ile Gly Cys Val Leu Ser
275                 280                 285                 290

gcc gat gtc ttt gcc agg tac tct cgc ctc cgc cag tgg aac acc ctc      1027
Ala Asp Val Phe Ala Arg Tyr Ser Arg Leu Arg Gln Trp Asn Thr Leu
291                 296                 301                 306

tat ctg tgt ggg aca gat gag tat ggt aca gca aca gag acc aag gct      1075
Tyr Leu Cys Gly Thr Asp Glu Tyr Gly Thr Ala Thr Glu Thr Lys Ala
307                 312                 317                 322

ctg gag gag gga cta acc ccc cag gag atc tgc gac aag tac cac atc      1123
Leu Glu Glu Gly Leu Thr Pro Gln Glu Ile Cys Asp Lys Tyr His Ile
323                 328                 333                 338

atc cat gct gac atc tac cgc tgg ttt aac att tcg ttt gat att ttt      1171
Ile His Ala Asp Ile Tyr Arg Trp Phe Asn Ile Ser Phe Asp Ile Phe
339                 344                 349                 354

ggt cgc acc acc act cca cag cag acc aaa atc acc cag gac att ttc      1219
Gly Arg Thr Thr Thr Pro Gln Gln Thr Lys Ile Thr Gln Asp Ile Phe
355                 360                 365                 370

cag cag ttg ctg aaa cga ggt ttt gtg ctg caa gat act gtg gag caa      1267
Gln Gln Leu Leu Lys Arg Gly Phe Val Leu Gln Asp Thr Val Glu Gln
371                 376                 381                 386

ctg cga tgt gag cac tgt gct cgc ttc ctg gct gac cgc ttc gtg gag      1315
Leu Arg Cys Glu His Cys Ala Arg Phe Leu Ala Asp Arg Phe Val Glu
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387                 392                 397                 402

ggc gtg tgt ccc ttc tgt ggc tat gag gag gct cgg ggt gac cag tgt      1363
Gly Val Cys Pro Phe Cys Gly Tyr Glu Glu Ala Arg Gly Asp Gln Cys
403                 408                 413                 418

gac aag tgt ggc aag ctc atc aat gct gtc gag ctt aag aag cct cag      1411
Asp Lys Cys Gly Lys Leu Ile Asn Ala Val Glu Leu Lys Lys Pro Gln
419                 424                 429                 434

tgt aaa gtc tgc cga tca tgc cct gtg gtg cag tcg agc cag cac ctg      1459
Cys Lys Val Cys Arg Ser Cys Pro Val Val Gln Ser Ser Gln His Leu
435                 440                 445                 450

ttt ctg gac ctg cct aag ctg gag aag cga ctg gag gag tgg ttg ggg      1507
Phe Leu Asp Leu Pro Lys Leu Glu Lys Arg Leu Glu Glu Trp Leu Gly
451                 456                 461                 466

agg aca ttg cct ggc agt gac tgg aca ccc aat gcc cag ttt atc acc      1555
Arg Thr Leu Pro Gly Ser Asp Trp Thr Pro Asn Ala Gln Phe Ile Thr
467                 472                 477                 482

cgt tct tgg ctt cgg gat ggc ctc aag cca cgc tgc ata acc cga gac      1603
Arg Ser Trp Leu Arg Asp Gly Leu Lys Pro Arg Cys Ile Thr Arg Asp
483                 488                 493                 498

ctc aaa tgg gga acc cct gta ccc tta gaa ggt ttt gaa gac aag gta      1651
Leu Lys Trp Gly Thr Pro Val Pro Leu Glu Gly Phe Glu Asp Lys Val
499                 504                 509                 514

ttc tat gtc tgg ttt gat gcc act att ggc tat ctg tcc atc aca gcc      1699
Phe Tyr Val Trp Phe Asp Ala Thr Ile Gly Tyr Leu Ser Ile Thr Ala
515                 520                 525                 530

aac tac aca gac cag tgg gag aga tgg tgg aag aac cca gag caa gcc      1747
Asn Tyr Thr Asp Gln Trp Glu Arg Trp Trp Lys Asn Pro Glu Gln Ala
531                 536                 541                 546

cta gga gct gag gat aac tat acc ttg gtc agc cac ctc att gct aca      1795
Leu Gly Ala Glu Asp Asn Tyr Thr Leu Val Ser His Leu Ile Ala Thr
547                 552                 557                 562

gag tac ctg aac tat gag gat ggg aaa ttc tct aag agc cgc ggt gtg      1843
Glu Tyr Leu Asn Tyr Glu Asp Gly Lys Phe Ser Lys Ser Arg Gly Val
563                 568                 573                 578

gga gtg ttt ggg gac atg gcc cag gac acg ggg atc cct gct gac atc      1891
Gly Val Phe Gly Asp Met Ala Gln Asp Thr Gly Ile Pro Ala Asp Ile
579                 584                 589                 594

tgg cgc ttc tat ctg ctg tac att cgg cct gag ggc cag gac agt gct      1939
Trp Arg Phe Tyr Leu Leu Tyr Ile Arg Pro Glu Gly Gln Asp Ser Ala
595                 600                 605                 610

ttc tcc tgg acg gac ctg ctg ctg aag aat aat tct gag ctg ctt aac      1987
Phe Ser Trp Thr Asp Leu Leu Leu Lys Asn Asn Ser Glu Leu Leu Asn
611                 616                 621                 626
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aac ctg ggc aac ttc atc aac aga gct ggg atg ttt gtg tct aag ttc      2035
Asn Leu Gly Asn Phe Ile Asn Arg Ala Gly Met Phe Val Ser Lys Phe
627                 632                 637                 642

ttt ggg ggc tat gtg cct gag atg gtg ctc acc cct gat gat cag cgc      2083
Phe Gly Gly Tyr Val Pro Glu Met Val Leu Thr Pro Asp Asp Gln Arg
643                 648                 653                 658

ctg ctg gcc cat gtc acc ctg gag ctc cag cac tat cac cag cta ctt      2131
Leu Leu Ala His Val Thr Leu Glu Leu Gln His Tyr His Gln Leu Leu
659                 664                 669                 674

gag aag gtt cgg atc cgg gat gcc ttg cgc agt atc ctc acc ata tct      2179
Glu Lys Val Arg Ile Arg Asp Ala Leu Arg Ser Ile Leu Thr Ile Ser
675                 680                 685                 690

cga cat ggc aac caa tat att cag gtg aat gag ccc tgg aag cgg att      2227
Arg His Gly Asn Gln Tyr Ile Gln Val Asn Glu Pro Trp Lys Arg Ile
691                 696                 701                 706

aaa ggc agt gag gct gac agg caa cgg gca gga aca gtg act ggc ttg      2275
Lys Gly Ser Glu Ala Asp Arg Gln Arg Ala Gly Thr Val Thr Gly Leu
707                 712                 717                 722

gca gtg aat ata gct gcc ttg ctc tct gtc atg ctt cag cct tac atg      2323
Ala Val Asn Ile Ala Ala Leu Leu Ser Val Met Leu Gln Pro Tyr Met
723                 728                 733                 738

ccc acg gtt agt gcc aca atc cag gcc cag ctg cag ctc cca cct cca      2371
Pro Thr Val Ser Ala Thr Ile Gln Ala Gln Leu Gln Leu Pro Pro Pro
739                 744                 749                 754

gcc tgc agt atc ctg ctg aca aac ttc ctg tgt acc tta cca gca gga      2419
Ala Cys Ser Ile Leu Leu Thr Asn Phe Leu Cys Thr Leu Pro Ala Gly
755                 760                 765                 770

cac cag att ggc aca gtc agt ccc ttg ttc caa aaa ttg gaa aat gac      2467
His Gln Ile Gly Thr Val Ser Pro Leu Phe Gln Lys Leu Glu Asn Asp
771                 776                 781                 786

cag att gaa agt tta agg cag cgc ttt gga ggg ggc cag gca aaa acg      2515
Gln Ile Glu Ser Leu Arg Gln Arg Phe Gly Gly Gly Gln Ala Lys Thr
787                 792                 797                 802

tcc ctg aag cca gca gtt gta gag act gtt aca aca gcc aag cca cag      2563
Ser Leu Lys Pro Ala Val Val Glu Thr Val Thr Thr Ala Lys Pro Gln
803                 808                 813                 818

cag ata caa gcg ctg atg gat gaa gtg aca aaa caa gga aac att gtc      2611
Gln Ile Gln Ala Leu Met Asp Glu Val Thr Lys Gln Gly Asn Ile Val
819                 824                 829                 834

cga gaa ctg aaa gca caa aag gca gac aag aac gag gtt gct gcg gag      2659
Arg Glu Leu Lys Ala Gln Lys Ala Asp Lys Asn Glu Val Ala Ala Glu
835                 840                 845                 850
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851 856 861 866

aaa ccc cct gaa gcc cct aaa ggc aag aag aaa aag taa aagaccttgg 2756
Lys Pro Pro Glu Ala Pro Lys Gly Lys Lys Lys Lys *
867 872 877

ctcatagaaa gtcactttaa tagataggga cagtaataaa taaatgtaca atctctatat 2816

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agtgtggccc aagtggggga ctgatgctcc caagtcgacg cggccggata tttaatagta 2996

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Met Arg
1

ctg ttc gtg agt gat ggc gtc ccg ggt tgc ttg ccg gtg ctg gcc gcc 163
Leu Phe Val Ser Asp Gly Val Pro Gly Cys Leu Pro Val Leu Ala Ala
3 8 13 18

gcc ggg aga gcc cgg ggc aga gca gag gtg ctc atc agc act gta ggc 211
Ala Gly Arg Ala Arg Gly Arg Ala Glu Val Leu Ile Ser Thr Val Gly
19 24 29 34

ccg gaa gat tgt gtg gtc ccg ttc ctg acc cgg cct aag gtc cct gtc 259
Pro Glu Asp Cys Val Val Pro Phe Leu Thr Arg Pro Lys Val Pro Val
35 40 45 50

ttg cag ctg gat agc ggc aac tac ctc ttc tcc act agt gca atc tgc 307
Leu Gln Leu Asp Ser Gly Asn Tyr Leu Phe Ser Thr Ser Ala Ile Cys
51 56 61 66

cga tat ttt ttt ttg tta tct ggc tgg gag caa gat gac ctc act aac 355
Arg Tyr Phe Phe Leu Leu Ser Gly Trp Glu Gln Asp Asp Leu Thr Asn

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 67                  72                  77                  82

cag tgg ctg gaa tgg gaa gcg aca gag ctg cag cca gct ttg tct gct       403
Gln Trp Leu Glu Trp Glu Ala Thr Glu Leu Gln Pro Ala Leu Ser Ala
 83                  88                  93                  98

gcc ctg tac tat tta gtg gtc caa ggc aag aag ggg gaa gat gtt ctt       451
Ala Leu Tyr Tyr Leu Val Val Gln Gly Lys Lys Gly Glu Asp Val Leu
 99                 104                 109                 114

ggt tca gtg cgg aga gcc ctg act cac att gac cac agc ttg agt cgt       499
Gly Ser Val Arg Arg Ala Leu Thr His Ile Asp His Ser Leu Ser Arg
115                 120                 125                 130

cag aac tgt cct ttc ctg gct ggg gag aca gaa tct cta gcc gac att       547
Gln Asn Cys Pro Phe Leu Ala Gly Glu Thr Glu Ser Leu Ala Asp Ile
131                 136                 141                 146

gtt ttg tgg gga gcc cta tac cca tta ctg caa gat ccc gcc tac ctc       595
Val Leu Trp Gly Ala Leu Tyr Pro Leu Leu Gln Asp Pro Ala Tyr Leu
147                 152                 157                 162

cct gag gag ctg agt gcc ctg cac agc tgg ttc cag aca ctg agt acc       643
Pro Glu Glu Leu Ser Ala Leu His Ser Trp Phe Gln Thr Leu Ser Thr
163                 168                 173                 178

cag gaa cca tgt cag cga gct gca gag act gta ctg aaa cag caa ggt       691
Gln Glu Pro Cys Gln Arg Ala Ala Glu Thr Val Leu Lys Gln Gln Gly
179                 184                 189                 194

gtc ctg gct ctc cgg cct tac ctc caa aag cag ccc cag ccc agc ccc       739
Val Leu Ala Leu Arg Pro Tyr Leu Gln Lys Gln Pro Gln Pro Ser Pro
195                 200                 205                 210

gct gag gga agg gct gtc acc aat gag cct gag gag gag gag ctg gct       787
Ala Glu Gly Arg Ala Val Thr Asn Glu Pro Glu Glu Glu Glu Leu Ala
211                 216                 221                 226

acc cta tct gag gag gag att gct atg gct gtt act gct tgg gag aag       835
Thr Leu Ser Glu Glu Glu Ile Ala Met Ala Val Thr Ala Trp Glu Lys
227                 232                 237                 242

ggc cta gaa agt ttg ccc ccg ctg cgg ccc cag cag aat cca gtg ttg       883
Gly Leu Glu Ser Leu Pro Pro Leu Arg Pro Gln Gln Asn Pro Val Leu
243                 248                 253                 258

cct gtg gct gga gaa agg aat gtg ctc atc acc agt gcc ctc cct tac       931
Pro Val Ala Gly Glu Arg Asn Val Leu Ile Thr Ser Ala Leu Pro Tyr
259                 264                 269                 274

gtc aac aat gtc ccc cac ctt ggg aac atc att ggt tgt gtg ctc agt       979
Val Asn Asn Val Pro His Leu Gly Asn Ile Ile Gly Cys Val Leu Ser
275                 280                 285                 290

gcc gat gtc ttt gcc agg tac tct cgc ctc cgc cag tgg aac acc ctc      1027
Ala Asp Val Phe Ala Arg Tyr Ser Arg Leu Arg Gln Trp Asn Thr Leu
291                 296                 301                 306
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tat ctg tgt ggg aca gat gag tat ggt aca gca aca gag acc aag gct      1075
Tyr Leu Cys Gly Thr Asp Glu Tyr Gly Thr Ala Thr Glu Thr Lys Ala
307                 312                 317                 322

ctg gag gag gga cta acc ccc cag gag atc tgc gac aag tac cac atc      1123
Leu Glu Glu Gly Leu Thr Pro Gln Glu Ile Cys Asp Lys Tyr His Ile
323                 328                 333                 338

atc cat gct gac atc tac cgc tgg ttt aac att tcg ttt gat att ttt      1171
Ile His Ala Asp Ile Tyr Arg Trp Phe Asn Ile Ser Phe Asp Ile Phe
339                 344                 349                 354

ggt cgc acc acc act cca cag cag acc aaa atc acc cag gac att ttc      1219
Gly Arg Thr Thr Thr Pro Gln Gln Thr Lys Ile Thr Gln Asp Ile Phe
355                 360                 365                 370

cag cag ttg ctg aaa cga ggt ttt gtg ctg caa gat act gtg gag caa      1267
Gln Gln Leu Leu Lys Arg Gly Phe Val Leu Gln Asp Thr Val Glu Gln
371                 376                 381                 386

ctg cga tgt gag cac tgt gct cgc ttc ctg gct gac cgc ttc gtg gag      1315
Leu Arg Cys Glu His Cys Ala Arg Phe Leu Ala Asp Arg Phe Val Glu
387                 392                 397                 402

ggc gtg tgt ccc ttc tgt ggc tat gag gag gct cgg ggt gac cag tgt      1363
Gly Val Cys Pro Phe Cys Gly Tyr Glu Glu Ala Arg Gly Asp Gln Cys
403                 408                 413                 418

gac aag tgt ggc aag ctc atc aat gct gtc gag ctt aag aag cct cag      1411
Asp Lys Cys Gly Lys Leu Ile Asn Ala Val Glu Leu Lys Lys Pro Gln
419                 424                 429                 434

tgt aaa gtc tgc cga tca tgc cct gtg gtg cag tcg agc cag cac ctg      1459
Cys Lys Val Cys Arg Ser Cys Pro Val Val Gln Ser Ser Gln His Leu
435                 440                 445                 450

ttt ctg gac ctg cct aag ctg gag aag cga ctg gag gag tgg ttg ggg      1507
Phe Leu Asp Leu Pro Lys Leu Glu Lys Arg Leu Glu Glu Trp Leu Gly
451                 456                 461                 466

agg aca ttg cct ggc agt gac tgg aca ccc aat gcc cag ttt atc acc      1555
Arg Thr Leu Pro Gly Ser Asp Trp Thr Pro Asn Ala Gln Phe Ile Thr
467                 472                 477                 482

cgt tct tgg ctt cgg gat ggc ctc aag cca cgc tgc ata acc cga gac      1603
Arg Ser Trp Leu Arg Asp Gly Leu Lys Pro Arg Cys Ile Thr Arg Asp
483                 488                 493                 498

ctc aaa tgg gga acc cct gta ccc tta gaa ggt ttt gaa gac aag gta      1651
Leu Lys Trp Gly Thr Pro Val Pro Leu Glu Gly Phe Glu Asp Lys Val
499                 504                 509                 514

ttc tat gtc tgg ttt gat gcc act att ggc tat ctg tcc atc aca gcc      1699
Phe Tyr Val Trp Phe Asp Ala Thr Ile Gly Tyr Leu Ser Ile Thr Ala
515                 520                 525                 530
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aac tac aca gac cag tgg gag aga tgg tgg aag aac cca gag caa gtg      1747
Asn Tyr Thr Asp Gln Trp Glu Arg Trp Trp Lys Asn Pro Glu Gln Val
531                 536                 541                 546

gac ctg tat cag ttc atg gcc aaa gac aat gtt cct ttc cat agc tta      1795
Asp Leu Tyr Gln Phe Met Ala Lys Asp Asn Val Pro Phe His Ser Leu
547                 552                 557                 562

gtc ttt cct tgc tca gcc cta gga gct gag gat aac tat acc ttg gtc      1843
Val Phe Pro Cys Ser Ala Leu Gly Ala Glu Asp Asn Tyr Thr Leu Val
563                 568                 573                 578

agc cac ctc att gct aca gag tac ctg aac tat gag gat ggg aaa ttc      1891
Ser His Leu Ile Ala Thr Glu Tyr Leu Asn Tyr Glu Asp Gly Lys Phe
579                 584                 589                 594

tct aag agc cgc ggt gtg gga gtg ttt ggg gac atg gcc cag gac acg      1939
Ser Lys Ser Arg Gly Val Gly Val Phe Gly Asp Met Ala Gln Asp Thr
595                 600                 605                 610

ggg atc cct gct gac atc tgg cgc ttc tat ctg ctg tac att cgg cct      1987
Gly Ile Pro Ala Asp Ile Trp Arg Phe Tyr Leu Leu Tyr Ile Arg Pro
611                 616                 621                 626

gag ggc cag gac agt gct ttc tcc tgg acg gac ctg ctg ctg aag aat      2035
Glu Gly Gln Asp Ser Ala Phe Ser Trp Thr Asp Leu Leu Leu Lys Asn
627                 632                 637                 642

aat tct gag ctg ctt aac aac ctg ggc aac ttc atc aac aga gct ggg      2083
Asn Ser Glu Leu Leu Asn Asn Leu Gly Asn Phe Ile Asn Arg Ala Gly
643                 648                 653                 658

atg ttt gtg tct aag ttc ttt ggg ggc tat gtg cct gag atg gtg ctc      2131
Met Phe Val Ser Lys Phe Phe Gly Gly Tyr Val Pro Glu Met Val Leu
659                 664                 669                 674

acc cct gat gat cag cgc ctg ctg gcc cat gtc acc ctg gag ctc cag      2179
Thr Pro Asp Asp Gln Arg Leu Leu Ala His Val Thr Leu Glu Leu Gln
675                 680                 685                 690

cac tat cac cag cta ctt gag aag gtt cgg atc cgg gat gcc ttg cgc      2227
His Tyr His Gln Leu Leu Glu Lys Val Arg Ile Arg Asp Ala Leu Arg
691                 696                 701                 706

agt atc ctc acc ata tct cga cat ggc aac caa tat att cag gtg aat      2275
Ser Ile Leu Thr Ile Ser Arg His Gly Asn Gln Tyr Ile Gln Val Asn
707                 712                 717                 722

gag ccc tgg aag cgg att aaa ggc agt gag gct gac agg caa cgg gca      2323
Glu Pro Trp Lys Arg Ile Lys Gly Ser Glu Ala Asp Arg Gln Arg Ala
723                 728                 733                 738

gga aca gtg act ggc ttg gca gtg aat ata gct gcc ttg ctc tct gtc      2371
Gly Thr Val Thr Gly Leu Ala Val Asn Ile Ala Ala Leu Leu Ser Val
739                 744                 749                 754

atg ctt cag cct tac atg ccc acg gtt agt gcc aca atc cag gcc cag      2419
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Met Leu Gln Pro Tyr Met Pro Thr Val Ser Ala Thr Ile Gln Ala Gln
755                 760                 765                 770

ctg cag ctc cca cct cca gcc tgc agt atc ctg ctg aca aac ttc ctg      2467
Leu Gln Leu Pro Pro Pro Ala Cys Ser Ile Leu Leu Thr Asn Phe Leu
771                 776                 781                 786

tgt acc tta cca gca gga cac cag att ggc aca gtc agt ccc ttg ttc      2515
Cys Thr Leu Pro Ala Gly His Gln Ile Gly Thr Val Ser Pro Leu Phe
787                 792                 797                 802

caa aaa ttg gaa aat gac cag att gaa agt tta agg cag cgc ttt gga      2563
Gln Lys Leu Glu Asn Asp Gln Ile Glu Ser Leu Arg Gln Arg Phe Gly
803                 808                 813                 818

ggg ggc cag gca aaa acg tcc ctg aag cca gca gtt gta gag act gtt      2611
Gly Gly Gln Ala Lys Thr Ser Leu Lys Pro Ala Val Val Glu Thr Val
819                 824                 829                 834

aca aca gcc aag cca cag cag ata caa gcg ctg atg gat gaa gtg aca      2659
Thr Thr Ala Lys Pro Gln Gln Ile Gln Ala Leu Met Asp Glu Val Thr
835                 840                 845                 850

aaa caa gga aac ctc ttg gat cta aag aaa cag ttg gct gta gct gag      2707
Lys Gln Gly Asn Leu Leu Asp Leu Lys Lys Gln Leu Ala Val Ala Glu
851                 856                 861                 866

ggg aaa ccc cct gaa gcc cct aaa ggc aag aag aaa aag taa aagacct      2756
Gly Lys Pro Pro Glu Ala Pro Lys Gly Lys Lys Lys Lys  *
867                 872                 877

tggctcatag aaagtcactt taatagatag ggacagtaat aaataaatgt acaatctcta   2816

tatacaagct gagacctttc cttttgtcta ctccaagcct tccccctgcg tatgtgggat   2876

tgagggtcac atcattggca ctagtgagag ggtagtcagt agccacttct gggaaaggtg   2936

ggtagtgtgg cccaagtggg ggactgatgc tcccaagtcg acgcggccgg atatttaata   2996

gtagtagtcg acccgggaat tccggaccgg tacctgcaag gcgtaccagc tttccccaat   3056

agtgaattcg tatta                                                    3071


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gaactctcaa actccgaatc tgattttcac tctcccagga aggcttcgga aatcactgtg      120

gattgtcaat acaggagtcc atactgactg aatccctaat tttggcctgt attcttctcc      180

ctctgtgaac catcttctta gaagtcactg aaccaagagt gccagaaaac catcccaaga      240

ctcacacaga gttgttcttc catagtggat gttttggcca ctggacatca gaaccacatt      300

ttgggtttga agaatcttct acatgctgag aaagtggaac tccagagaca ctcctgaaat      360

tgtcctaagt caaaggagcc aaacggtgta cgagctccct ctctgccgtc ccctctgaga      420

gcagcc    atg gcc ctg agt gat gtc gat gtg aaa aag cag att aag cac      468
          Met Ala Leu Ser Asp Val Asp Val Lys Lys Gln Ile Lys His
           1              5                        10

atg atg gct ttc att gag cag gaa gcc aat gag aaa gca gag gaa atc        516
Met Met Ala Phe Ile Glu Gln Glu Ala Asn Glu Lys Ala Glu Glu Ile
 15                  20                  25                  30

gat gcc aag gct gag gaa gag ttt aac att gag aaa gga cgc ctc gtg        564
Asp Ala Lys Ala Glu Glu Glu Phe Asn Ile Glu Lys Gly Arg Leu Val
 31                  36                  41                  46

caa acc caa cga ctg aag att atg gag tat tat gag aaa aag gag aag        612
Gln Thr Gln Arg Leu Lys Ile Met Glu Tyr Tyr Glu Lys Lys Glu Lys
 47                  52                  57                  62

cag ata gag cag cag aag aaa atc ctg atg tcc acc atg agg aat cag        660
Gln Ile Glu Gln Gln Lys Lys Ile Leu Met Ser Thr Met Arg Asn Gln
 63                  68                  73                  78

gcg agg ctg aaa gtc ctg aga gcc cga aat gac ctc atc tca gat ttg        708
Ala Arg Leu Lys Val Leu Arg Ala Arg Asn Asp Leu Ile Ser Asp Leu
 79                  84                  89                  94

ctc agt gag gcg aag ctg aga ctc agc agg att gtg gag gac cca gag        756
Leu Ser Glu Ala Lys Leu Arg Leu Ser Arg Ile Val Glu Asp Pro Glu
 95                 100                 105                 110

gtc tac cag ggg ctg ctg gat aaa ctg gtg ctc cag ggt ctg ctc cga        804
Val Tyr Gln Gly Leu Leu Asp Lys Leu Val Leu Gln Gly Leu Leu Arg
111                 116                 121                 126

ctg ctg gaa cct gtg atg att gta cgc tgc cgg cca caa gac ctc ctc        852
Leu Leu Glu Pro Val Met Ile Val Arg Cys Arg Pro Gln Asp Leu Leu
127                 132                 137                 142

ctg gtg gag gct gct gta caa aaa gcc atc ccc gag tac atg aca att        900
Leu Val Glu Ala Ala Val Gln Lys Ala Ile Pro Glu Tyr Met Thr Ile
143                 148                 153                 158

tcc cag aaa cat gtg gag gtc cag att gat aaa gag gca tac ctg gct        948
Ser Gln Lys His Val Glu Val Gln Ile Asp Lys Glu Ala Tyr Leu Ala
159                 164                 169                 174
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gtg aat gca gct gga ggt gtg gag gtc tac agt ggc aat cag aga ata      996
Val Asn Ala Ala Gly Gly Val Glu Val Tyr Ser Gly Asn Gln Arg Ile
175                 180                 185                 190

aag gtt tca aat acc ttg gaa agc cga ctg gat ctc tca gcc aag caa     1044
Lys Val Ser Asn Thr Leu Glu Ser Arg Leu Asp Leu Ser Ala Lys Gln
191                 196                 201                 206

aag atg cca gaa ata cga atg gcc ttg ttt ggt gct aac acc aac aga     1092
Lys Met Pro Glu Ile Arg Met Ala Leu Phe Gly Ala Asn Thr Asn Arg
207                 212                 217                 222

aag ttc ttt ata taa gcctctggga agtgaagcta gtgttgaacc actaaaccat     1147
Lys Phe Phe Ile  *
223

aaaagtttaa gtttttggg gaaaggaaac tagtagtgtt tcctcctctt tgatgctctg    1207

atactgttct gtttttcttc acgaaatacc ctttggatag ctaaagtgtt aactttgaaa   1267

taaagcccaa attaatgctc agaaaaaaaa aaaaa                              1302




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aaggcgggtg aaaggctgcc tcccgagact ctccttgctt ggaattctgc ccactctgcg     120

gagttagcag tcacgacctc cagcacagg atg tgg tac cac aga ttg tcc cac     173
                                Met Trp Tyr His Arg Leu Ser His
                                  1               5

cta cac agc agg ctt cag gac ttg ctg aag gga gga gtc ata tat ccg     221
Leu His Ser Arg Leu Gln Asp Leu Leu Lys Gly Gly Val Ile Tyr Pro
  9                 14                  19                  24

gcc ctt cca cag ccc aac ttc aaa agc tta ctt cct tta gct gtc cat     269
Ala Leu Pro Gln Pro Asn Phe Lys Ser Leu Leu Pro Leu Ala Val His
 25                 30                  35                  40

tgg cac cat aca gcc tcc aag tct ctg act tgt gct tgg cag caa cat     317
Trp His His Thr Ala Ser Lys Ser Leu Thr Cys Ala Trp Gln Gln His
 41                 46                  51                  56

gaa gat cat ttt gag ctg aaa tat gct aat acc gtg atg cgc ttt gat     365
Glu Asp His Phe Glu Leu Lys Tyr Ala Asn Thr Val Met Arg Phe Asp
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 57                  62                  67                  72

tac gtc tgg ctt cga gac cac tgc cgc tca gca tcg tgc tac aac tct        413
Tyr Val Trp Leu Arg Asp His Cys Arg Ser Ala Ser Cys Tyr Asn Ser
 73                  78                  83                  88

aag act cac cag cgc agc ctg gat act gcc agt gtg gat tta tgt atc        461
Lys Thr His Gln Arg Ser Leu Asp Thr Ala Ser Val Asp Leu Cys Ile
 89                  94                  99                 104

aag cca aag acc att cgt ctg gat gag acc aca ctc ttt ttc act tgg        509
Lys Pro Lys Thr Ile Arg Leu Asp Glu Thr Thr Leu Phe Phe Thr Trp
105                 110                 115                 120

cca gat ggt cat gtg act aaa tat gat ttg aat tgg ctg gtg aaa aac        557
Pro Asp Gly His Val Thr Lys Tyr Asp Leu Asn Trp Leu Val Lys Asn
121                 126                 131                 136

agc tat gaa ggg cag aaa caa aaa gtc atc cag cct aga ata cta tgg        605
Ser Tyr Glu Gly Gln Lys Gln Lys Val Ile Gln Pro Arg Ile Leu Trp
137                 142                 147                 152

aat gct gaa atc tac cag caa gcc caa gtt cca tcg gta gat tgc cag        653
Asn Ala Glu Ile Tyr Gln Gln Ala Gln Val Pro Ser Val Asp Cys Gln
153                 158                 163                 168

agc ttc tta gaa acc aac gag gga ctg aag aag ttt ctg caa aac ttt        701
Ser Phe Leu Glu Thr Asn Glu Gly Leu Lys Lys Phe Leu Gln Asn Phe
169                 174                 179                 184

ctg ctc tat gga att gca ttc gta gaa aat gtc cct ccc act caa gag        749
Leu Leu Tyr Gly Ile Ala Phe Val Glu Asn Val Pro Pro Thr Gln Glu
185                 190                 195                 200

cac aca gag aag ttg gca gaa agg atc agc tta atc aga gaa acc att        797
His Thr Glu Lys Leu Ala Glu Arg Ile Ser Leu Ile Arg Glu Thr Ile
201                 206                 211                 216

tat ggg agg atg tgg tat ttc act tca gac ttc tcc aga ggt gac act        845
Tyr Gly Arg Met Trp Tyr Phe Thr Ser Asp Phe Ser Arg Gly Asp Thr
217                 222                 227                 232

gcg tac acc aag cta gct ctg gat cgg cac act gac act acc tat ttt        893
Ala Tyr Thr Lys Leu Ala Leu Asp Arg His Thr Asp Thr Thr Tyr Phe
233                 238                 243                 248

caa gag ccc tgt ggc att caa gtg ttt cat tgt ctt aaa cat gaa gga        941
Gln Glu Pro Cys Gly Ile Gln Val Phe His Cys Leu Lys His Glu Gly
249                 254                 259                 264

act ggt ggc agg aca ctg cta gta gat gga ttc tat gca gca gaa cag        989
Thr Gly Gly Arg Thr Leu Leu Val Asp Gly Phe Tyr Ala Ala Glu Gln
265                 270                 275                 280

gta ctt caa aag gca cct gag gaa ttt gaa ctc ctc agt aaa gtg cca       1037
Val Leu Gln Lys Ala Pro Glu Glu Phe Glu Leu Leu Ser Lys Val Pro
281                 286                 291                 296
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ttg aag cat gaa tat att gaa gat gtt gga gaa tgt cac aac cac atg      1085
Leu Lys His Glu Tyr Ile Glu Asp Val Gly Glu Cys His Asn His Met
297                 302                 307                 312

att ggg att ggg cca gtc tta aat atc tac cca tgg aat aaa gag ctg      1133
Ile Gly Ile Gly Pro Val Leu Asn Ile Tyr Pro Trp Asn Lys Glu Leu
313                 318                 323                 328

tat ttg atc agg tac aac aac tat gac cgg gct gtc atc aat acc gtt      1181
Tyr Leu Ile Arg Tyr Asn Asn Tyr Asp Arg Ala Val Ile Asn Thr Val
329                 334                 339                 344

cct tat gat gtc gtc cat cgc tgg tat aca gca cac cgg act cta acg      1229
Pro Tyr Asp Val Val His Arg Trp Tyr Thr Ala His Arg Thr Leu Thr
345                 350                 355                 360

ata gag ttg agg aga cct gag aat gag ttt tgg gtc aaa cta aag cct      1277
Ile Glu Leu Arg Arg Pro Glu Asn Glu Phe Trp Val Lys Leu Lys Pro
361                 366                 371                 376

ggc agg gtc cta ttt ata gac aac tgg cgt gtc cta cat ggc agg gaa      1325
Gly Arg Val Leu Phe Ile Asp Asn Trp Arg Val Leu His Gly Arg Glu
377                 382                 387                 392

tgc ttc act ggc tac cgc caa ctg tgt ggc tgc tat tta aca aga gat      1373
Cys Phe Thr Gly Tyr Arg Gln Leu Cys Gly Cys Tyr Leu Thr Arg Asp
393                 398                 403                 408

gat gta tta aac act gct cgc ctc ttg ggg ctt cag gct taa aattgac      1422
Asp Val Leu Asn Thr Ala Arg Leu Leu Gly Leu Gln Ala  *
409                 414                 419

agcatctgga ttatgaatac acctggcacc ctggctacca gaatttcata tgggcagaat    1482

aatattgtgt caaactctaa aaaaaaaaaa                                      1512


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gcttgggact cccaaagaac cagtagtaga agtctattct tgttcctatt gtacaaattc     120

gccaatattc aacagcgttc ttaaactgaa caagcatatc aaagagaatc ataaaaacat     180

tcccttggcc ctgaattata tccacaatgg gaagaaatcc agggccttaa gccccctatc     240
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tcctgtggcc atagagcaga catctcttaa g   atg atg cag gca gta gga ggt      292
                                     Met Met Gln Ala Val Gly Gly
                                      1               5

gca cct gca cgt ccc act gga gaa tat atc tgt aat caa tgt ggt gct      340
Ala Pro Ala Arg Pro Thr Gly Glu Tyr Ile Cys Asn Gln Cys Gly Ala
 8                  13                  18                  23

aag tac aca tcc cta gac agc ttt cag act cac cta aaa act cat ctc      388
Lys Tyr Thr Ser Leu Asp Ser Phe Gln Thr His Leu Lys Thr His Leu
 24                 29                  34                  39

gac act gtg ctt cca aaa ttg acc tgt cct cag tgc aac aag gaa ttc      436
Asp Thr Val Leu Pro Lys Leu Thr Cys Pro Gln Cys Asn Lys Glu Phe
 40                 45                  50                  55

ccc aac caa gaa tcc ttg ctg aag cat gtt acc att cac ttt atg atc      484
Pro Asn Gln Glu Ser Leu Leu Lys His Val Thr Ile His Phe Met Ile
 56                 61                  66                  71

act tca acg tat tac atc tgt gag agt tgt gac aag caa ttc aca tca      532
Thr Ser Thr Tyr Tyr Ile Cys Glu Ser Cys Asp Lys Gln Phe Thr Ser
 72                 77                  82                  87

gtg gat gac ctt cag aaa cac ctg ctg gac atg cac acc ttt gtc ttc      580
Val Asp Asp Leu Gln Lys His Leu Leu Asp Met His Thr Phe Val Phe
 88                 93                  98                 103

ttt cgc tgc acc ctc tgc cag gaa gtt ttt gac tca aaa gtc tcc att      628
Phe Arg Cys Thr Leu Cys Gln Glu Val Phe Asp Ser Lys Val Ser Ile
104                109                 114                 119

cag ctc cac ttg gct gtg aag cac agt aac gaa aag aaa gtc tat agg      676
Gln Leu His Leu Ala Val Lys His Ser Asn Glu Lys Lys Val Tyr Arg
120                125                 130                 135

tgc aca tct tgc aac tgg gac ttc cgc aac gaa act gac ttg cag ctc      724
Cys Thr Ser Cys Asn Trp Asp Phe Arg Asn Glu Thr Asp Leu Gln Leu
136                141                 146                 151

cat gtg aaa cac aac cac ctg gaa aac caa ggg aaa gtg cat aag tgc      772
His Val Lys His Asn His Leu Glu Asn Gln Gly Lys Val His Lys Cys
152                157                 162                 167

att ttc tgc ggt gag tcc ttt ggc acc gag gtg gag ctg caa tgc cac      820
Ile Phe Cys Gly Glu Ser Phe Gly Thr Glu Val Glu Leu Gln Cys His
168                173                 178                 183

atc acc act cac agt aag aag tac aac tgc aag ttc tgt agc aaa gcc      868
Ile Thr Thr His Ser Lys Lys Tyr Asn Cys Lys Phe Cys Ser Lys Ala
184                189                 194                 199

ttc cat gcg atc att ttg tta gaa aaa cac ttg cga gaa aaa cac tgt      916
Phe His Ala Ile Ile Leu Leu Glu Lys His Leu Arg Glu Lys His Cys
200                205                 210                 215
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gta ttc gaa acc aag aca ccc aac tgt gga aca aat gga gct tcc gag       964
Val Phe Glu Thr Lys Thr Pro Asn Cys Gly Thr Asn Gly Ala Ser Glu
216                 221                 226                 231

caa gtg cag aaa gag gaa gtg gag ctg cag act ttg ctg acc aac agc      1012
Gln Val Gln Lys Glu Glu Val Glu Leu Gln Thr Leu Leu Thr Asn Ser
232                 237                 242                 247

cag gag tcc cac aac agt cac gat ggg agc gaa gaa gac gtt gac acc      1060
Gln Glu Ser His Asn Ser His Asp Gly Ser Glu Glu Asp Val Asp Thr
248                 253                 258                 263

tct gag cct atg tac ggc tgc gac att tgt ggg gca gcc tac act atg      1108
Ser Glu Pro Met Tyr Gly Cys Asp Ile Cys Gly Ala Ala Tyr Thr Met
264                 269                 274                 279

gaa act ttg ctg cag aat cac cag ctc cga gac cac aac atc aga cct      1156
Glu Thr Leu Leu Gln Asn His Gln Leu Arg Asp His Asn Ile Arg Pro
280                 285                 290                 295

gga gaa agt gcc atc gtg aaa aag aaa gct gag ctc att aaa ggg aat      1204
Gly Glu Ser Ala Ile Val Lys Lys Lys Ala Glu Leu Ile Lys Gly Asn
296                 301                 306                 311

tac aag tgc aac gtg tgc tct cga acc ttc ttc tcc gaa aat ggc ctc      1252
Tyr Lys Cys Asn Val Cys Ser Arg Thr Phe Phe Ser Glu Asn Gly Leu
312                 317                 322                 327

cgg gaa cat atg cag acc cac cta ggc cct gtc aaa cac tac atg tgc      1300
Arg Glu His Met Gln Thr His Leu Gly Pro Val Lys His Tyr Met Cys
328                 333                 338                 343

cct att tgc gga gag cgg ttt ccc tcc ctt tta act ctt act gaa cac      1348
Pro Ile Cys Gly Glu Arg Phe Pro Ser Leu Leu Thr Leu Thr Glu His
344                 349                 354                 359

aaa gtc acg cat agt aag agt ctt gat act gga aac tgc cgg att tgc      1396
Lys Val Thr His Ser Lys Ser Leu Asp Thr Gly Asn Cys Arg Ile Cys
360                 365                 370                 375

aag atg cct ctc cag agt gaa gag gag ttt tta gag cat tgc caa atg      1444
Lys Met Pro Leu Gln Ser Glu Glu Glu Phe Leu Glu His Cys Gln Met
376                 381                 386                 391

cac cct gac ttg agg aat tcc ctg aca ggc ttt cgc tgc gtg gtg tgc      1492
His Pro Asp Leu Arg Asn Ser Leu Thr Gly Phe Arg Cys Val Val Cys
392                 397                 402                 407

atg cag aca gtg acc tcc acc ttg gaa ctc aaa atc cat ggg acg ttc      1540
Met Gln Thr Val Thr Ser Thr Leu Glu Leu Lys Ile His Gly Thr Phe
408                 413                 418                 423

cac atg caa aag aca ggg aat ggg tct gca gtt cag acc aca ggg cgg      1588
His Met Gln Lys Thr Gly Asn Gly Ser Ala Val Gln Thr Thr Gly Arg
424                 429                 434                 439

ggc cag cac gtc caa aaa ctg tat aag tgc gca tct tgc ctc aaa gaa      1636
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Gly Gln His Val Gln Lys Leu Tyr Lys Cys Ala Ser Cys Leu Lys Glu
440                 445                 450                 455

ttc cgt tcc aag caa gat ctg gtg aaa ctt gat atc aat ggc ctg cca      1684
Phe Arg Ser Lys Gln Asp Leu Val Lys Leu Asp Ile Asn Gly Leu Pro
456                 461                 466                 471

tat ggt ctg tgt gcc ggc tgc gtg aat ctc agt aag agc gcc agc cca      1732
Tyr Gly Leu Cys Ala Gly Cys Val Asn Leu Ser Lys Ser Ala Ser Pro
472                 477                 482                 487

ggc att aac gtc cct ccc ggc acg aat aga cca ggc ttg ggc cag aat      1780
Gly Ile Asn Val Pro Pro Gly Thr Asn Arg Pro Gly Leu Gly Gln Asn
488                 493                 498                 503

gag aat ctg agt gcc att gag ggg aaa ggc aag gtg ggg gga ctg aag      1828
Glu Asn Leu Ser Ala Ile Glu Gly Lys Gly Lys Val Gly Gly Leu Lys
504                 509                 514                 519

aca cgc tgc tct agc tgc aac gtt aag ttt gag tct gaa agt gaa ctc      1876
Thr Arg Cys Ser Ser Cys Asn Val Lys Phe Glu Ser Glu Ser Glu Leu
520                 525                 530                 535

cag aac cac atc caa acc atc cac cga gag ctc gtg cca gac agc aac      1924
Gln Asn His Ile Gln Thr Ile His Arg Glu Leu Val Pro Asp Ser Asn
536                 541                 546                 551

agc aca cag ttg aaa acg ccc caa gta tca cca atg ccc aga atc agt      1972
Ser Thr Gln Leu Lys Thr Pro Gln Val Ser Pro Met Pro Arg Ile Ser
552                 557                 562                 567

ccc tcc cag tcg gat gag aag aag acc tat caa tgc atc aag tgt cag      2020
Pro Ser Gln Ser Asp Glu Lys Lys Thr Tyr Gln Cys Ile Lys Cys Gln
568                 573                 578                 583

atg gtt ttc tac aat gaa tgg gat att cag gtt cat gtt gca aat cac      2068
Met Val Phe Tyr Asn Glu Trp Asp Ile Gln Val His Val Ala Asn His
584                 589                 594                 599

atg att gat gaa gga ctg aac cat gaa tgc aaa ctc tgc agc cag acc      2116
Met Ile Asp Glu Gly Leu Asn His Glu Cys Lys Leu Cys Ser Gln Thr
600                 605                 610                 615

ttt gac tct cct gcc aaa ctc cag tgc cac ctg ata gag cac agc ttc      2164
Phe Asp Ser Pro Ala Lys Leu Gln Cys His Leu Ile Glu His Ser Phe
616                 621                 626                 631

gaa ggg atg gga ggc acc ttc aag tgt cca gtc tgc ttt aca gta ttt      2212
Glu Gly Met Gly Gly Thr Phe Lys Cys Pro Val Cys Phe Thr Val Phe
632                 637                 642                 647

gtt caa gca aac aag ttg cag cag cat att ttc tct gcc cat gga caa      2260
Val Gln Ala Asn Lys Leu Gln Gln His Ile Phe Ser Ala His Gly Gln
648                 653                 658                 663

gaa gac aag atc tat gac tgt aca caa tgt cca cag aag ttt ttc ttc      2308
Glu Asp Lys Ile Tyr Asp Cys Thr Gln Cys Pro Gln Lys Phe Phe Phe
```

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664                 669                 674                 679

caa aca gag ctg cag aat cat aca atg acc caa cac agc agt tag tgc      2356
Gln Thr Glu Leu Gln Asn His Thr Met Thr Gln His Ser Ser  *
680                 685                 690

aagtacagtc tctcaaggag aattgatttt gtggcacaaa aagggaacat gttttactct    2416

ttgcacgaaa ctttcattgt taatgtatat tattcagaaa cattgtattg taccataaaa    2476

cttgtattat caaactgttg gatgttcatg tgtttgaact tttgcgcacc ggatagaccc    2536

cttgtatata aagtgttgca catgtattat gtcgtctgat actaaaatgg tcttataaag    2596

acaagtggac ttgggcccta ttcaggcaag attaaaaaaa aaaaaaaagg gcggccgctc    2656

tagaggatcc aagcttacgt acgcgtgcat gcgacgtcat agctctctcc ctatagtgat    2716

cgtattataa g                                                         2727




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     <222> (6)..(509)

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         Met Ala Gln Glu Glu Glu Asp Val Arg Asp Tyr Asn Leu Thr
           1               5                  10

gaa gaa cag aag gcg atc aag gcc aag tat ccg cca gtc aat agg aag      95
Glu Glu Gln Lys Ala Ile Lys Ala Lys Tyr Pro Pro Val Asn Arg Lys
 15                  20                  25                  30

tac gag tat ttg gat cat aca gca gat gtc cag tta cac gca tgg gga     143
Tyr Glu Tyr Leu Asp His Thr Ala Asp Val Gln Leu His Ala Trp Gly
 31                  36                  41                  46

gat act ctg gag gaa gca ttt gag caa tgt gca atg gcc atg ttt ggt     191
Asp Thr Leu Glu Glu Ala Phe Glu Gln Cys Ala Met Ala Met Phe Gly
 47                  52                  57                  62

tac atg aca gat act ggg aca gtg gag ccc ctc caa aca gta gaa gta     239
Tyr Met Thr Asp Thr Gly Thr Val Glu Pro Leu Gln Thr Val Glu Val
 63                  68                  73                  78

gaa acc caa gga gat gac tta cag tct ctt ctg ttt cac ttt ttg gat     287
Glu Thr Gln Gly Asp Asp Leu Gln Ser Leu Leu Phe His Phe Leu Asp
 79                  84                  89                  94
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gaa tgg ctt tat aag ttc agt gct gat gaa ttc ttc ata ccc cgg gaa      335
Glu Trp Leu Tyr Lys Phe Ser Ala Asp Glu Phe Phe Ile Pro Arg Glu
 95                 100                 105                 110

gtg aaa gta ctt agc att gat caa aga aat ttc aaa tta cga tca att      383
Val Lys Val Leu Ser Ile Asp Gln Arg Asn Phe Lys Leu Arg Ser Ile
111                 116                 121                 126

ggg tgg gga gaa gaa ttt tca ttg tcc aag cac cct cag gga aca gaa      431
Gly Trp Gly Glu Glu Phe Ser Leu Ser Lys His Pro Gln Gly Thr Glu
127                 132                 137                 142

gtc aaa gca ata aca tat tca gca atg cag gtc tat aat gaa gag aac      479
Val Lys Ala Ile Thr Tyr Ser Ala Met Gln Val Tyr Asn Glu Glu Asn
143                 148                 153                 158

ccg gaa gtt ttt gtg atc att gac att taa g acaccaaaaa ataaaagact      530
Pro Glu Val Phe Val Ile Ile Asp Ile  *
159                 164

cctacgaaga aaaaaaaaa                                                550
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<222> (842)..(2014)

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cgtccggggc accccccccg gctctgagcc gcccgcgggg ccggcctcgg cccggagcgg     120

aggaaggagt cgccgaggag cagcctgagg ccccagagtc tgagacgagc cgccgccgcc     180

cccgccactg cggggaggag ggggaggagg agcgggagga gggacgagct ggtcgggaga     240

agaggaaaaa aacttttgag acttttccgt tgccgctggg agccggaggc gcggggacct     300

cttggcgcga cgctgccccg cgaggaggca ggacttgggg accccagacc gcctcccttt     360

gccgccgggg acgcttgctc cctccctgcc ccctacacgg cgtccctcag gcgcccccat     420

tccggaccag ccctcgggag tcgccgaccc ggcctcccgc aaagactttt ccccagacct     480

cgggcgcacc ccctgcacgc cgccttcatc cccggcctgt ctcctgagcc cccgcgcatc     540

ctagaccctt tctcctccag gagacggatc tctctccgac ctgccacaga tcccctattc     600

aagaccaccc accttctggt accagatcgc gcccatctag gttatttccg tgggatactg     660
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agacaccccc ggtccaagcc tcccctccac cactgcgccc ttctccctga ggagcctcag     720

ctttccctcg aggccctcct acctttgcc  gggagacccc cagcccctgc aggggcgggg     780

cctccccacc acaccagccc tgttcgcgct ctcggcagtg ccggggggcg ccgcctcccc     840

c    atg ccg ccc tcc ggg ctg cgg ctg ctg ccg ctg ctg cta ccg ctg      886
     Met Pro Pro Ser Gly Leu Arg Leu Leu Pro Leu Leu Leu Pro Leu
       1               5                  10

ctg tgg cta ctg gtg ctg acg cct ggc cgg ccg gcc gcg gga cta tcc      934
Leu Trp Leu Leu Val Leu Thr Pro Gly Arg Pro Ala Ala Gly Leu Ser
 16                 21                  26                  31

acc tgc aag act atc gac atg gag ctg gtg aag cgg aag cgc atc gag      982
Thr Cys Lys Thr Ile Asp Met Glu Leu Val Lys Arg Lys Arg Ile Glu
 32                 37                  42                  47

gcc atc cgc ggc cag atc ctg tcc aag ctg cgg ctc gcc agc ccc ccg     1030
Ala Ile Arg Gly Gln Ile Leu Ser Lys Leu Arg Leu Ala Ser Pro Pro
 48                 53                  58                  63

agc cag ggg gag gtg ccg ccc ggc ccg ctg ccc gag gcc gtg ctc gcc     1078
Ser Gln Gly Glu Val Pro Pro Gly Pro Leu Pro Glu Ala Val Leu Ala
 64                 69                  74                  79

ctg tac aac agc acc cgc gac cgg gtg gcc ggg gag agt gca gaa ccg     1126
Leu Tyr Asn Ser Thr Arg Asp Arg Val Ala Gly Glu Ser Ala Glu Pro
 80                 85                  90                  95

gag ccc gag cct gag gcc gac tac tac gcc aag gag gtc acc cgc gtg     1174
Glu Pro Glu Pro Glu Ala Asp Tyr Tyr Ala Lys Glu Val Thr Arg Val
 96                101                 106                 111

cta atg gtg gaa acc cac aac gaa atc tat gac aag ttc aag cag agt     1222
Leu Met Val Glu Thr His Asn Glu Ile Tyr Asp Lys Phe Lys Gln Ser
112                117                 122                 127

aca cac agc ata tat atg ttc ttc aac aca tca gag ctc cga gaa gcg     1270
Thr His Ser Ile Tyr Met Phe Phe Asn Thr Ser Glu Leu Arg Glu Ala
128                133                 138                 143

gta cct gaa ccc gtg ttg ctc tcc cgg gca gag ctg cgt ctg ctg agg     1318
Val Pro Glu Pro Val Leu Leu Ser Arg Ala Glu Leu Arg Leu Leu Arg
144                149                 154                 159

ctc aag tta aaa gtg gag cag cac gtg gag ctg tac cag aaa tac agc     1366
Leu Lys Leu Lys Val Glu Gln His Val Glu Leu Tyr Gln Lys Tyr Ser
160                165                 170                 175

aac aat tcc tgg cga tac ctc agc aac cgg ctg ctg gca ccc agc gac     1414
Asn Asn Ser Trp Arg Tyr Leu Ser Asn Arg Leu Leu Ala Pro Ser Asp
176                181                 186                 191

tcg cca gag tgg tta tct ttt gat gtc acc gga gtt gtg cgg cag tgg     1462
Ser Pro Glu Trp Leu Ser Phe Asp Val Thr Gly Val Val Arg Gln Trp
192                197                 202                 207
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10034240.010402

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ttg agc cgt gga ggg gaa att gag ggc ttt cgc ctt agc gcc cac tgc      1510
Leu Ser Arg Gly Gly Glu Ile Glu Gly Phe Arg Leu Ser Ala His Cys
208                 213                 218                 223

tcc tgt gac agc agg gat aac aca ctg caa gtg gac atc aac ggg ttc      1558
Ser Cys Asp Ser Arg Asp Asn Thr Leu Gln Val Asp Ile Asn Gly Phe
224                 229                 234                 239

act acc ggc cgc cga ggt gac ctg gcc acc att cat ggc atg aac cgg      1606
Thr Thr Gly Arg Arg Gly Asp Leu Ala Thr Ile His Gly Met Asn Arg
240                 245                 250                 255

cct ttc ctg ctt ctc atg gcc acc ccg ctg gag agg gcc cag cat ctg      1654
Pro Phe Leu Leu Leu Met Ala Thr Pro Leu Glu Arg Ala Gln His Leu
256                 261                 266                 271

caa agc tcc cgg cac cgc cga gcc ctg gac acc aac tat tgc ttc agc      1702
Gln Ser Ser Arg His Arg Arg Ala Leu Asp Thr Asn Tyr Cys Phe Ser
272                 277                 282                 287

tcc acg gag aag aac tgc tgc gtg cgg cag ctg tac att gac ttc cgc      1750
Ser Thr Glu Lys Asn Cys Cys Val Arg Gln Leu Tyr Ile Asp Phe Arg
288                 293                 298                 303

aag gac ctc ggc tgg aag tgg atc cac gag ccc aag ggc tac cat gcc      1798
Lys Asp Leu Gly Trp Lys Trp Ile His Glu Pro Lys Gly Tyr His Ala
304                 309                 314                 319

aac ttc tgc ctc ggg ccc tgc ccc tac att tgg agc ctg gac acg cag      1846
Asn Phe Cys Leu Gly Pro Cys Pro Tyr Ile Trp Ser Leu Asp Thr Gln
320                 325                 330                 335

tac agc aag gtc ctg gcc ctg tac aac cag cat aac ccg ggc gcc tcg      1894
Tyr Ser Lys Val Leu Ala Leu Tyr Asn Gln His Asn Pro Gly Ala Ser
336                 341                 346                 351

gcg gcg ccg tgc tgc gtg ccg cag gcg ctg gag ccg ctg ccc atc gtg      1942
Ala Ala Pro Cys Cys Val Pro Gln Ala Leu Glu Pro Leu Pro Ile Val
352                 357                 362                 367

tac tac gtg ggc cgc aag ccc aag gtg gag cag ctg tcc aac atg atc      1990
Tyr Tyr Val Gly Arg Lys Pro Lys Val Glu Gln Leu Ser Asn Met Ile
368                 373                 378                 383

gtg cgc tcc tgc aag tgc agc tga ggtcccgccc cgccccgccc cgccccggca    2044
Val Arg Ser Cys Lys Cys Ser  *
384                 389

ggcccggccc caccccgccc cgccccgct gccttgccca tgggggctgt atttaaggac    2104

acccgtgccc caagcccacc tggggcccca ttaaagatgg agagaggact gcggatctct    2164

gtgtcattgg gcgcctgcct ggggtctcca tccctgacgt tcccccactc ccactccctc    2224

tctctccctc tctgcctcct cctgcctgtc tgcactattc ctttgcccgg catcaaggca    2284
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caggggacca gtggggaaca ctactgtagt tagatctatt tattgagcac cttgggcact   2344

gttgaagtgc cttacattaa tgaactcatt cagtcaccat agcaacactc tgagatgcag   2404

ggactctgat aacacccatt ttaaaggtga ggaaacaagc ccagagaggt taagggagga   2464

gttcctgccc accaggaacc tgctttagtg gggatagtg  aagaagacaa taaaagatag   2524

tagttcaggc caggcggggt gctcacgcct gtaatcctag cacttttggg aggcagagat   2584

gggaggatta cttgaatcca ggcatttgag accagcctgg gtaacatagt gagaccctat   2644

ctctacaaaa cacttttaaa aaatgtacac ctgtggtccc agctactctg gaggctaagg   2704

tgggaggatc acttgatcct gggaggtcaa ggctgcag                           2742



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atcagactaa gaaagcagaa tttgtacgca cagcagaaaa atttaaaaat caagtaatta    120

ac   atg gaa aaa gat aaa cac agt cat ttc tac aac caa aaa agt gac     167
     Met Glu Lys Asp Lys His Ser His Phe Tyr Asn Gln Lys Ser Asp
       1               5                  10

ttc aga att gag cat agt atg cta gaa gaa ttg gaa aat aaa ttg att     215
Phe Arg Ile Glu His Ser Met Leu Glu Glu Leu Glu Asn Lys Leu Ile
 16                  21                  26                  31

cac agc agg aaa aca gaa aga gca aaa atc cag caa caa ttg gcc aaa     263
His Ser Arg Lys Thr Glu Arg Ala Lys Ile Gln Gln Gln Leu Ala Lys
 32                  37                  42                  47

ata cat aat aat gta aag aaa ctt cag cat caa tta aaa gat gtg aag     311
Ile His Asn Asn Val Lys Lys Leu Gln His Gln Leu Lys Asp Val Lys
 48                  53                  58                  63

cct aca cct gat ttt gtt gag aag ctc aga gaa atg atg gaa gaa att     359
Pro Thr Pro Asp Phe Val Glu Lys Leu Arg Glu Met Met Glu Glu Ile
 64                  69                  74                  79

gaa aat gca att aac act ttt aaa gaa gag cag agg ttg ata tat gaa     407
Glu Asn Ala Ile Asn Thr Phe Lys Glu Glu Gln Arg Leu Ile Tyr Glu
 80                  85                  90                  95
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gag cta att aaa gaa gag aag aca act aat aat gag ttg agt gcc ata       455
Glu Leu Ile Lys Glu Glu Lys Thr Thr Asn Asn Glu Leu Ser Ala Ile
 96                 101                 106                 111

tca aga aaa att gac aca tgg gct ttg ggt aat tca gaa aca gag aaa       503
Ser Arg Lys Ile Asp Thr Trp Ala Leu Gly Asn Ser Glu Thr Glu Lys
112                 117                 122                 127

gct ttc aga gca atc tca agc aaa gtt cct gta gac aaa gta aca cca       551
Ala Phe Arg Ala Ile Ser Ser Lys Val Pro Val Asp Lys Val Thr Pro
128                 133                 138                 143

agt act ctt cca gaa gag gta cta gat ttt gaa aaa ttc ctt cag caa       599
Ser Thr Leu Pro Glu Glu Val Leu Asp Phe Glu Lys Phe Leu Gln Gln
144                 149                 154                 159

aca gga ggg cga caa ggt gcc tgg gat gat tat gat cac cag aac ttt       647
Thr Gly Gly Arg Gln Gly Ala Trp Asp Asp Tyr Asp His Gln Asn Phe
160                 165                 170                 175

gta aag gtg aga aac aaa cat aaa ggg aag cca aca ttt atg gaa gaa       695
Val Lys Val Arg Asn Lys His Lys Gly Lys Pro Thr Phe Met Glu Glu
176                 181                 186                 191

gtt cta gaa cac ctt cct gga aaa aca caa gat gaa gtt caa cag cat       743
Val Leu Glu His Leu Pro Gly Lys Thr Gln Asp Glu Val Gln Gln His
192                 197                 202                 207

gaa aaa tgg tat caa aag ttt ctg gct cta gaa gaa aga aaa aaa gag       791
Glu Lys Trp Tyr Gln Lys Phe Leu Ala Leu Glu Glu Arg Lys Lys Glu
208                 213                 218                 223

tca att cag att tgg aaa act aaa aag cag caa aaa agg gag gaa att       839
Ser Ile Gln Ile Trp Lys Thr Lys Lys Gln Gln Lys Arg Glu Glu Ile
224                 229                 234                 239

ttc aag tta aag gaa aag gca gac aac aca cct gtg ctt ttt cat aat       887
Phe Lys Leu Lys Glu Lys Ala Asp Asn Thr Pro Val Leu Phe His Asn
240                 245                 250                 255

aaa caa gag gat aat caa aag caa aaa gag gaa caa aga aag aaa cag       935
Lys Gln Glu Asp Asn Gln Lys Gln Lys Glu Glu Gln Arg Lys Lys Gln
256                 261                 266                 271

aaa ttg gca gtt gaa gct tgg aag aaa cag aaa agt ata gaa atg tca       983
Lys Leu Ala Val Glu Ala Trp Lys Lys Gln Lys Ser Ile Glu Met Ser
272                 277                 282                 287

atg aaa tgt gct tcc cag tta aaa gaa gaa gaa gag aaa gag aaa aaa      1031
Met Lys Cys Ala Ser Gln Leu Lys Glu Glu Glu Glu Lys Glu Lys Lys
288                 293                 298                 303

cat cag aaa gaa cgc cag cgc cag ttt aag tta aaa tta cta cta gaa      1079
His Gln Lys Glu Arg Gln Arg Gln Phe Lys Leu Lys Leu Leu Leu Glu
304                 309                 314                 319

agt tat acc cag cag aag aaa gaa cag gaa gaa ttt ttg agg ctt gaa      1127
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Ser Tyr Thr Gln Gln Lys Lys Glu Gln Glu Glu Phe Leu Arg Leu Glu
320                 325                 330                 335

aag gag ata agg gaa aag gca gaa aag gca gaa aaa agg aaa aat gct      1175
Lys Glu Ile Arg Glu Lys Ala Glu Lys Ala Glu Lys Arg Lys Asn Ala
336                 341                 346                 351

gct gat gaa att tcc aga ttt caa gaa aga gat tta cat aaa ctt gaa      1223
Ala Asp Glu Ile Ser Arg Phe Gln Glu Arg Asp Leu His Lys Leu Glu
352                 357                 362                 367

ctg aaa att cta gat aga cag gca aag gaa gat gaa aag tca caa aaa      1271
Leu Lys Ile Leu Asp Arg Gln Ala Lys Glu Asp Glu Lys Ser Gln Lys
368                 373                 378                 383

caa aga aga ctg gca aaa tta aaa gaa aag gtt gaa aac aat gtt agt      1319
Gln Arg Arg Leu Ala Lys Leu Lys Glu Lys Val Glu Asn Asn Val Ser
384                 389                 394                 399

aga gat ccc tct agg ctt tac aaa ccc acc aaa ggt tgg gaa gaa cga      1367
Arg Asp Pro Ser Arg Leu Tyr Lys Pro Thr Lys Gly Trp Glu Glu Arg
400                 405                 410                 415

acc aaa aag ata gga cca aca ggc tct ggg cca ctt cta cat atc cca      1415
Thr Lys Lys Ile Gly Pro Thr Gly Ser Gly Pro Leu Leu His Ile Pro
416                 421                 426                 431

cat agg gct att cca acc tgg aga caa gga ata cag aga aga gta tga      1463
His Arg Ala Ile Pro Thr Trp Arg Gln Gly Ile Gln Arg Arg Val  *
432                 437                 442                 447

gataatcaaa ttgctactca gttgataaga atgttaacat actaagttat accagggaga   1523

gagtgactaa ccacattctt taaatatcaa tagcttagtc agattgatta ttgtgctata   1583

ttgtgaattg agaggtatta agtttcatga ggctttgtca ttagtattcc tgcttctacc   1643

aagaaggtat ttaatatatg tgttggccta ttattgatgt aaaagttatt taaataagtt   1703

aatgttagaa acattattca atttaaatac tgaaaacatt tcaaagagat tttgtttttg   1763

ttatagcata gcaaagtaaa ttggaacaat catacaatga catttttttaa accaaaattt   1823

tgtaactttt ataacttgga gttaagttag cttgagtaac aaaaaggtaa agtggttttt   1883

gtttagagtt acgaaatgtt agtacttttt ctatgtttaa caaattggca gtttgtcagt   1943

tatgacattt ttgtgtaata aatattttgt atttgtttga aaaaaaaaaa a            1994


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aggggaactg tcttcctccg caggcgcgag gctgggtaca gggtctattg tctgtggttg     120

actccgtact ttggtctgag gccttcggga gctttcccga ggcagttagc agaagccgca     180

gcggccgccc ccgcccgtct cctctgtccc tgggcccggg agggaccaac ttggcgtcac     240

gcccctcagc ggtcgccact ctcttctctg ttgttgggtc cgcatcgtat tcccggaatc     300

agacggtgcc ccatag    atg gcc agc ttt ccc ccg agg gtc aac gag aaa      349
                     Met Ala Ser Phe Pro Pro Arg Val Asn Glu Lys
                       1               5

gag atc gtg aga tca cgt act ata ggt gaa ctt tta gct cct gca gct      397
Glu Ile Val Arg Ser Arg Thr Ile Gly Glu Leu Leu Ala Pro Ala Ala
 12                  17                  22                  27

cct ttt gac aag aaa tgt ggt cgt gaa aat tgg act gtt gct ttt gct      445
Pro Phe Asp Lys Lys Cys Gly Arg Glu Asn Trp Thr Val Ala Phe Ala
 28                  33                  38                  43

cca gat ggt tca tac ttt gct tgg tca caa gga cat cgc aca gta aag      493
Pro Asp Gly Ser Tyr Phe Ala Trp Ser Gln Gly His Arg Thr Val Lys
 44                  49                  54                  59

ctt gtt ccg tgg tcc cag tgc ctt cag aac ttt ctc ttg cat ggc acc      541
Leu Val Pro Trp Ser Gln Cys Leu Gln Asn Phe Leu Leu His Gly Thr
 60                  65                  70                  75

aag aat gtt acc aat tca agc agt tta aga ttg cca aga caa aat agt      589
Lys Asn Val Thr Asn Ser Ser Ser Leu Arg Leu Pro Arg Gln Asn Ser
 76                  81                  86                  91

gat ggt ggt cag aaa aat aag cct cgt gaa cat att ata gac tgt gga      637
Asp Gly Gly Gln Lys Asn Lys Pro Arg Glu His Ile Ile Asp Cys Gly
 92                  97                 102                 107

gat ata gtc tgg agt ctt gct ttt ggg tca tca gtt cca gaa aaa cag      685
Asp Ile Val Trp Ser Leu Ala Phe Gly Ser Ser Val Pro Glu Lys Gln
108                 113                 118                 123

agt cgc tgt gta aat ata gaa tgg cat cgc ttc aga ttt gga caa gat      733
Ser Arg Cys Val Asn Ile Glu Trp His Arg Phe Arg Phe Gly Gln Asp
124                 129                 134                 139

cag cta ctt ctt gct aca ggg ttg aac aat ggg cgt atc aaa ata tgg      781
Gln Leu Leu Leu Ala Thr Gly Leu Asn Asn Gly Arg Ile Lys Ile Trp
140                 145                 150                 155

gat gta tat aca gga aaa ctc ctc ctt aac ttg gta gat cat act gaa      829
Asp Val Tyr Thr Gly Lys Leu Leu Leu Asn Leu Val Asp His Thr Glu
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10034240.010402

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156                 161                 166                 171

gtg gtc aga gat tta act ttt gct cca gat gga agc ttg atc ctg gtg        877
Val Val Arg Asp Leu Thr Phe Ala Pro Asp Gly Ser Leu Ile Leu Val
172                 177                 182                 187

tca gct tca aga gac aaa act ctc aga gta tgg gac ctg aaa gat gat        925
Ser Ala Ser Arg Asp Lys Thr Leu Arg Val Trp Asp Leu Lys Asp Asp
188                 193                 198                 203

gga aac atg atg aaa gta ttg agg ggg cat cag aat tgg gtg tac agc        973
Gly Asn Met Met Lys Val Leu Arg Gly His Gln Asn Trp Val Tyr Ser
204                 209                 214                 219

tgt gca ttc tct cct gac tct tct atg ctg tgt tca gtc gga gcc agt       1021
Cys Ala Phe Ser Pro Asp Ser Ser Met Leu Cys Ser Val Gly Ala Ser
220                 225                 230                 235

aaa gca gtt ttc ctt tgg aat atg gat aaa tac acc atg ata cgg aaa       1069
Lys Ala Val Phe Leu Trp Asn Met Asp Lys Tyr Thr Met Ile Arg Lys
236                 241                 246                 251

cta gaa gga cat cac cat gat gtg gta gct tgt gac ttt tct cct gat       1117
Leu Glu Gly His His His Asp Val Val Ala Cys Asp Phe Ser Pro Asp
252                 257                 262                 267

gga gca tta ctg gct act gca tct tat gat act cga gta tat atc tgg       1165
Gly Ala Leu Leu Ala Thr Ala Ser Tyr Asp Thr Arg Val Tyr Ile Trp
268                 273                 278                 283

gat cca cat aat gga gac att ctg atg gaa ttt ggg cac ctg ttt ccc       1213
Asp Pro His Asn Gly Asp Ile Leu Met Glu Phe Gly His Leu Phe Pro
284                 289                 294                 299

cca cct act cca ata ttt gct gga gga gca aat gac cgg tgg gta cga       1261
Pro Pro Thr Pro Ile Phe Ala Gly Gly Ala Asn Asp Arg Trp Val Arg
300                 305                 310                 315

tct gta tct ttt agc cat gat gga ctg cat gtt gca agc ctt gct gat       1309
Ser Val Ser Phe Ser His Asp Gly Leu His Val Ala Ser Leu Ala Asp
316                 321                 326                 331

gat aaa atg gtg agg ttc tgg aga att gat gag gat tat cca gtg caa       1357
Asp Lys Met Val Arg Phe Trp Arg Ile Asp Glu Asp Tyr Pro Val Gln
332                 337                 342                 347

gtt gca cct ttg agc aat ggt ctt tgc tgt gcc ttc tct act gat ggc       1405
Val Ala Pro Leu Ser Asn Gly Leu Cys Cys Ala Phe Ser Thr Asp Gly
348                 353                 358                 363

agt gtt tta gct gct ggg aca cat gac gga agt gtg tat ttt tgg gcc       1453
Ser Val Leu Ala Ala Gly Thr His Asp Gly Ser Val Tyr Phe Trp Ala
364                 369                 374                 379

act cca cgg cag gtc cct agc ctg caa cat tta tgt cgc atg tca atc       1501
Thr Pro Arg Gln Val Pro Ser Leu Gln His Leu Cys Arg Met Ser Ile
380                 385                 390                 395
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cga aga gtg atg ccc acc caa gaa gtt cag gag ctg ccg att cct tcc      1549
Arg Arg Val Met Pro Thr Gln Glu Val Gln Glu Leu Pro Ile Pro Ser
396                 401                 406                 411

aag ctt ttg gag ttt ctc tcg tat cgt att tag aagattct gccttcccta      1600
Lys Leu Leu Glu Phe Leu Ser Tyr Arg Ile  *
412                 417                 422

gtagtaggga ctgacagaat acacttaaca caaacctcaa gctttactga cttcaattat    1660

ctgtttttaa agacgtagaa gatttattta atttgatatg ttcttgtact gcattttgat    1720

cagttgagct tttaaaatat tatttataga caatagaagt atttctgaac atatcaaata    1780

taaatttttt taaagatcta actgtgaaaa catacatacc tgtacatatt tagatataag    1840

ctgctatatg ttgaatggac ccttttgctt ttctgatttt tagttctgac atgtatatat    1900

tgcttcagta gagccacaat atgtatcttt gctgtaaagt gcaaggaaat tttaaattct    1960

gggacactga gttagatggt aaatactgac ttacgaaagt tgaattgggt gaggcgggca    2020

aatcacctga ggtcagcagt ttgagactag cctggcaaac atgatgaaac cctgtctcta    2080

ctaaaaatac agaaaaaaaa aaaattagcc aggcgggggg gggcacacct gtagtcctag    2140

ctacttggga ggctgaggca ggaaaattgc ttgaacccag gagggggagg ttgcagtaag    2200

ccaagatcac accactgcac tccaacctgg acaacagagc gagactccat ctcaaaaaaa    2260

aaaaaaaagg ggggccgttt taaagaaccc ttgggggggc ccaagtttac cgggggttgg    2320

aagaggaaaa ttttttccct tatggggggc ggattaaaag ccg                      2363


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gcctccggcc aggacgctgg gagctgcctg cgggaaggtg cggggagcgg agcc  atg      177
                                                             Met
                                                              1

gcc tcc ggt gcg tat aac ccg tat ata gag ata att gaa caa ccc agg      225
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Ala Ser Gly Ala Tyr Asn Pro Tyr Ile Glu Ile Ile Glu Gln Pro Arg
  2               7                  12                  17

cag agg gga atg cgt ttt aga tac aaa tgt gaa ggg cga tca gca ggc       273
Gln Arg Gly Met Arg Phe Arg Tyr Lys Cys Glu Gly Arg Ser Ala Gly
 18                 23                  28                  33

agc att cca ggg gag cac agc aca gac aac aac cga aca tac cct tct       321
Ser Ile Pro Gly Glu His Ser Thr Asp Asn Asn Arg Thr Tyr Pro Ser
 34                 39                  44                  49

atc cag att atg aac tat tat gga aaa gga aaa gtg aga att aca tta       369
Ile Gln Ile Met Asn Tyr Tyr Gly Lys Gly Lys Val Arg Ile Thr Leu
 50                 55                  60                  65

gta aca aag aat gac cca tat aaa cct cat cct cat gat tta gtt gga       417
Val Thr Lys Asn Asp Pro Tyr Lys Pro His Pro His Asp Leu Val Gly
 66                 71                  76                  81

aaa gac tgc aga gac ggc tac tat gaa gca gaa ttt gga caa gaa cgc       465
Lys Asp Cys Arg Asp Gly Tyr Tyr Glu Ala Glu Phe Gly Gln Glu Arg
 82                 87                  92                  97

aga cct ttg ttt ttc caa aat ttg ggt att cga tgt gtg aag aaa aaa       513
Arg Pro Leu Phe Phe Gln Asn Leu Gly Ile Arg Cys Val Lys Lys Lys
 98                103                 108                 113

gaa gta aaa gaa gct att att aca aga ata aag gca gga atc aat cca       561
Glu Val Lys Glu Ala Ile Ile Thr Arg Ile Lys Ala Gly Ile Asn Pro
114                119                 124                 129

ttc aat gtc cct gaa aaa cag ctg aat gat att gaa gat tgt gac ctc       609
Phe Asn Val Pro Glu Lys Gln Leu Asn Asp Ile Glu Asp Cys Asp Leu
130                135                 140                 145

aat gtg gtg aga ctg tgt ttt caa gtt ttt ctc cct gat gaa cat ggt       657
Asn Val Val Arg Leu Cys Phe Gln Val Phe Leu Pro Asp Glu His Gly
146                151                 156                 161

aat ttg acg act gct ctt cct cct gtt gtc tcg aac cca att tat gac       705
Asn Leu Thr Thr Ala Leu Pro Pro Val Val Ser Asn Pro Ile Tyr Asp
162                167                 172                 177

aac cgt gct cca aat act gca gaa tta agg att tgt cgt gta aac aag       753
Asn Arg Ala Pro Asn Thr Ala Glu Leu Arg Ile Cys Arg Val Asn Lys
178                183                 188                 193

aat tgt gga agt gtc aga gga gga gat gaa ata ttt cta ctt tgt gac       801
Asn Cys Gly Ser Val Arg Gly Gly Asp Glu Ile Phe Leu Leu Cys Asp
194                199                 204                 209

aaa gtt cag aaa gat gac ata gaa gtt cgt ttt gtg ttg aac gat tgg       849
Lys Val Gln Lys Asp Asp Ile Glu Val Arg Phe Val Leu Asn Asp Trp
210                215                 220                 225

gaa gca aaa ggc atc ttt tca caa gct gat gta cac cgt caa gta gcc       897
Glu Ala Lys Gly Ile Phe Ser Gln Ala Asp Val His Arg Gln Val Ala
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10037270.010402

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226                 231                 236                 241

att gtt ttc aaa act cca cca tat tgc aaa gct atc aca gaa ccc gta        945
Ile Val Phe Lys Thr Pro Pro Tyr Cys Lys Ala Ile Thr Glu Pro Val
242                 247                 252                 257

aca gta aaa atg cag ttg cgg aga cct tct gac cag gaa gtt agt gaa        993
Thr Val Lys Met Gln Leu Arg Arg Pro Ser Asp Gln Glu Val Ser Glu
258                 263                 268                 273

tct atg gat ttt aga tat ctg cca gat gaa aaa gat act tac ggc aat       1041
Ser Met Asp Phe Arg Tyr Leu Pro Asp Glu Lys Asp Thr Tyr Gly Asn
274                 279                 284                 289

aaa gca aag aaa caa aag aca act ctg ctt ttc cag aaa ctg tgc cag       1089
Lys Ala Lys Lys Gln Lys Thr Thr Leu Leu Phe Gln Lys Leu Cys Gln
290                 295                 300                 305

gat cac gtt aat ttt cct gag aga cca aga cct ggt ctc ctc ggt tca       1137
Asp His Val Asn Phe Pro Glu Arg Pro Arg Pro Gly Leu Leu Gly Ser
306                 311                 316                 321

att gga gaa gga aga tac ttc aaa aaa gaa cca aac ttg ttt tct cat       1185
Ile Gly Glu Gly Arg Tyr Phe Lys Lys Glu Pro Asn Leu Phe Ser His
322                 327                 332                 337

gat gca gtt gtg aga gaa atg cct aca ggg gtt tca agt caa gca gaa       1233
Asp Ala Val Val Arg Glu Met Pro Thr Gly Val Ser Ser Gln Ala Glu
338                 343                 348                 353

tcc tac tat ccc tca cct ggg ccc atc tca agt gga ttg tca cat cat       1281
Ser Tyr Tyr Pro Ser Pro Gly Pro Ile Ser Ser Gly Leu Ser His His
354                 359                 364                 369

gcc tca atg gca cct ctg cct tct tca agc tgg tca tca gtg gcc cac       1329
Ala Ser Met Ala Pro Leu Pro Ser Ser Ser Trp Ser Ser Val Ala His
370                 375                 380                 385

ccc acc cca cgc tca ggc aat aca aac cca ctg agt agt ttt tca aca       1377
Pro Thr Pro Arg Ser Gly Asn Thr Asn Pro Leu Ser Ser Phe Ser Thr
386                 391                 396                 401

agg aca ctt cct tct aat tcg caa ggt atc cca cca ttc ctg aga ata       1425
Arg Thr Leu Pro Ser Asn Ser Gln Gly Ile Pro Pro Phe Leu Arg Ile
402                 407                 412                 417

cct gtt ggg aat gat tta aat gct tct aat gct tgc att tac aac aat       1473
Pro Val Gly Asn Asp Leu Asn Ala Ser Asn Ala Cys Ile Tyr Asn Asn
418                 423                 428                 433

gcc gat gac ata gtc gga atg gaa gcg tca tcc atg cca tca gca gat       1521
Ala Asp Asp Ile Val Gly Met Glu Ala Ser Ser Met Pro Ser Ala Asp
434                 439                 444                 449

tta tat ggt att tct gat ccc aac atg ctg tct aat tgt tct gtg aat       1569
Leu Tyr Gly Ile Ser Asp Pro Asn Met Leu Ser Asn Cys Ser Val Asn
450                 455                 460                 465
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atg atg aca acc agc agt gac agc atg gga gag act gat aat cca aga      1617
Met Met Thr Thr Ser Ser Asp Ser Met Gly Glu Thr Asp Asn Pro Arg
466                 471                 476                 481

ctt ctg agc atg aat ctt gaa aac ccc tca tgt aat tca gtg tta gac      1665
Leu Leu Ser Met Asn Leu Glu Asn Pro Ser Cys Asn Ser Val Leu Asp
482                 487                 492                 497

cca aga gac ttg aga cag ctc cat cag atg tcc tct tcc agt atg tca      1713
Pro Arg Asp Leu Arg Gln Leu His Gln Met Ser Ser Ser Ser Met Ser
498                 503                 508                 513

gca ggc gcc aat tcc aat act act gtt ttt gtt tca caa tca gat gca      1761
Ala Gly Ala Asn Ser Asn Thr Thr Val Phe Val Ser Gln Ser Asp Ala
514                 519                 524                 529

ttt gag gga tct gac ttc agt tgt gca gat aac agc atg ata aat gag      1809
Phe Glu Gly Ser Asp Phe Ser Cys Ala Asp Asn Ser Met Ile Asn Glu
530                 535                 540                 545

tcg gga cca tca aac agt act aat cca aac agt cat ggt ttt gtt caa      1857
Ser Gly Pro Ser Asn Ser Thr Asn Pro Asn Ser His Gly Phe Val Gln
546                 551                 556                 561

gat agt cag tat tca ggt att ggc agt atg caa aat gag caa ttg agt      1905
Asp Ser Gln Tyr Ser Gly Ile Gly Ser Met Gln Asn Glu Gln Leu Ser
562                 567                 572                 577

gac tcc ttt cca tat gaa ttt ttt caa gta taa cttgcaag atttaaatcc      1956
Asp Ser Phe Pro Tyr Glu Phe Phe Gln Val  *
578                 583                 588

ttttaaatct tgataccacc tatatagatg cagcattttg tatttgtcta actggggata    2016

taatactata tttatactgt atatataata ctgactgaga atataatact gtatttgaga    2076

atataaaaaa ctttttttcag ggaagaagca tacaactttg gacatagcga atacaaaatt    2136

ggaagctgtc ataaaaagac aactcagagg ccaggcgcag gggctcacac ctgtaatcct    2196

agcactttgg gaggccaagg cgggtggatc acttgagacc aggaattcga gaccagcctg    2256

gccaacatgg tgaaaccccg tctctactaa aaatacaaaa attagctgag catggtggta    2316

cgtgcctgta ctgtcagcta cttgggaggc tgaggcacaa taattgtttg aacccaggaa    2376

gcagaggttg cagtgagctg agatcacacc accgcactcc agcctgggtg acagagtgag    2436

actctgtctc aaaaaaaaaa a                                              2457


<210> 224
<211> 2335
<212> DNA
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<213> Homo sapiens

<220>
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<222> (105)..(1853)

<400> 224
gcacgagctc aaccgagttg tcgtgttgcc ctcgcttctc agatccccgc cggaagtgaa      60

gagagcaagc agatttgaac ctatctgctt tcaagctggt catc atg atg aaa ctt      116
                                                 Met Met Lys Leu
                                                 1

aga cac aaa aat aaa aag cca ggt gaa ggt tcc aag ggc cac aag aag       164
Arg His Lys Asn Lys Lys Pro Gly Glu Gly Ser Lys Gly His Lys Lys
5                   10                  15                  20

ata agt tgg ccc tac cct cag cct gca aag caa aat ggg aag aaa gca       212
Ile Ser Trp Pro Tyr Pro Gln Pro Ala Lys Gln Asn Gly Lys Lys Ala
21                  26                  31                  36

acc tcc aaa gtg ccc tct gca cct cat ttt gtt cac ccc aat gat cat       260
Thr Ser Lys Val Pro Ser Ala Pro His Phe Val His Pro Asn Asp His
37                  42                  47                  52

gcc aat cga gag gct gaa tta aag aag aag tgg gtt gag gag atg agg       308
Ala Asn Arg Glu Ala Glu Leu Lys Lys Lys Trp Val Glu Glu Met Arg
53                  58                  63                  68

gag aag cag caa gcc gcc cgg gag caa gaa aga caa aaa cgc agg acc       356
Glu Lys Gln Gln Ala Ala Arg Glu Gln Glu Arg Gln Lys Arg Arg Thr
69                  74                  79                  84

att gag agc tac tgt cag gat gtc cta aga cgc cag gag gag ttt gag       404
Ile Glu Ser Tyr Cys Gln Asp Val Leu Arg Arg Gln Glu Glu Phe Glu
85                  90                  95                  100

cat aag gag gaa gtt ttg cag gaa tta aat atg ttt cct cag ctg gat       452
His Lys Glu Glu Val Leu Gln Glu Leu Asn Met Phe Pro Gln Leu Asp
101                 106                 111                 116

gac gag gcc acg agg aag gct tat tac aag gag ttc cgt aag gtg gtg       500
Asp Glu Ala Thr Arg Lys Ala Tyr Tyr Lys Glu Phe Arg Lys Val Val
117                 122                 127                 132

gaa tac tct gat gtg att ctg gaa gtc ctg gat gcc aga gac cca tta       548
Glu Tyr Ser Asp Val Ile Leu Glu Val Leu Asp Ala Arg Asp Pro Leu
133                 138                 143                 148

ggc tgc cgc tgc ttc caa atg gag gag gct gtc ctg cga gca caa ggc       596
Gly Cys Arg Cys Phe Gln Met Glu Glu Ala Val Leu Arg Ala Gln Gly
149                 154                 159                 164

aac aag aag ctg gtc ctg gtc ttg aac aag att gac ctg gtc ccc aag       644
Asn Lys Lys Leu Val Leu Val Leu Asn Lys Ile Asp Leu Val Pro Lys
165                 170                 175                 180
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gag gtt gtg gag aaa tgg ctg gat tac ctt cgg aat gag ttg cca acc        692
Glu Val Val Glu Lys Trp Leu Asp Tyr Leu Arg Asn Glu Leu Pro Thr
181                 186                 191                 196

gtg gct ttc aag gcc agt acc cag cat cag gtc aaa aac ctg aat cgt        740
Val Ala Phe Lys Ala Ser Thr Gln His Gln Val Lys Asn Leu Asn Arg
197                 202                 207                 212

tgc agt gtg cca gta gat cag gcc tct gag tca ctg ctg aaa agc aaa        788
Cys Ser Val Pro Val Asp Gln Ala Ser Glu Ser Leu Leu Lys Ser Lys
213                 218                 223                 228

gcc tgc ttt gga gct gaa aac ctc atg agg gtt ctg ggg aac tat tgc        836
Ala Cys Phe Gly Ala Glu Asn Leu Met Arg Val Leu Gly Asn Tyr Cys
229                 234                 239                 244

cgc ctt ggt gaa gtg cgc acc cac att cgt gtg ggt gtt gtg ggt ctt        884
Arg Leu Gly Glu Val Arg Thr His Ile Arg Val Gly Val Val Gly Leu
245                 250                 255                 260

ccc aat gtt ggg aag agc agc ctg atc aat agc ctg aag cgc agc cgc        932
Pro Asn Val Gly Lys Ser Ser Leu Ile Asn Ser Leu Lys Arg Ser Arg
261                 266                 271                 276

gca tgc agc gtg gga gct gtt cct gga att acc aaa ttc atg cag gag        980
Ala Cys Ser Val Gly Ala Val Pro Gly Ile Thr Lys Phe Met Gln Glu
277                 282                 287                 292

gtc tac ctg gac aag ttc atc cgg ctc ttg gat gct cca ggc att gtc       1028
Val Tyr Leu Asp Lys Phe Ile Arg Leu Leu Asp Ala Pro Gly Ile Val
293                 298                 303                 308

cca ggg ccc aac tca gag gtg ggc acc atc ctg cgt aac tgc gtc cac       1076
Pro Gly Pro Asn Ser Glu Val Gly Thr Ile Leu Arg Asn Cys Val His
309                 314                 319                 324

gtg cag aag ctg gca gac cct gtg acc cca gtg gag acc atc ctg cag       1124
Val Gln Lys Leu Ala Asp Pro Val Thr Pro Val Glu Thr Ile Leu Gln
325                 330                 335                 340

cgc tgc aac ctg gag gag att tcc aac tat tat ggc gtc tct ggg ttc       1172
Arg Cys Asn Leu Glu Glu Ile Ser Asn Tyr Tyr Gly Val Ser Gly Phe
341                 346                 351                 356

cag acc act gag cac ttt ctg acg gca gtg gcc cac cgt ttg ggg aag       1220
Gln Thr Thr Glu His Phe Leu Thr Ala Val Ala His Arg Leu Gly Lys
357                 362                 367                 372

aag aag aag gga ggc tta tat agt cag gaa cag gcg gcc aaa gct gtc       1268
Lys Lys Lys Gly Gly Leu Tyr Ser Gln Glu Gln Ala Ala Lys Ala Val
373                 378                 383                 388

cta gct gac tgg gtg agc ggg aag atc agc ttc tat ata cca cca cca       1316
Leu Ala Asp Trp Val Ser Gly Lys Ile Ser Phe Tyr Ile Pro Pro Pro
389                 394                 399                 404

gcc act cac act ctg ccc acc cat ctc agt gct gag atc gtt aag gaa       1364
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Ala Thr His Thr Leu Pro Thr His Leu Ser Ala Glu Ile Val Lys Glu
405                 410                 415                 420

atg acc gag gtc ttt gac atc gag gat act gag cag gcc aat gaa gac      1412
Met Thr Glu Val Phe Asp Ile Glu Asp Thr Glu Gln Ala Asn Glu Asp
421                 426                 431                 436

acc atg gaa tgc ttg gcc acc gga gaa tct gat gag ctg ttg ggt gac      1460
Thr Met Glu Cys Leu Ala Thr Gly Glu Ser Asp Glu Leu Leu Gly Asp
437                 442                 447                 452

acg gac cca ctt gaa atg gag atc aag ttg ctc cat tct ccg atg acg      1508
Thr Asp Pro Leu Glu Met Glu Ile Lys Leu Leu His Ser Pro Met Thr
453                 458                 463                 468

aaa ata gca gat gcc att gaa aat aaa acc acc gtg tat aag att gga      1556
Lys Ile Ala Asp Ala Ile Glu Asn Lys Thr Thr Val Tyr Lys Ile Gly
469                 474                 479                 484

gat ctc act ggg tat tgc acc aat ccg aac cgt cat cag atg ggg tgg      1604
Asp Leu Thr Gly Tyr Cys Thr Asn Pro Asn Arg His Gln Met Gly Trp
485                 490                 495                 500

gct aaa cgc aat gtg gac cac cgc cct aag agc aac agt atg gtg gat      1652
Ala Lys Arg Asn Val Asp His Arg Pro Lys Ser Asn Ser Met Val Asp
501                 506                 511                 516

gtc tgc tca gtg gac cgc cgc tca gtg ctg cag agg atc atg gag acg      1700
Val Cys Ser Val Asp Arg Arg Ser Val Leu Gln Arg Ile Met Glu Thr
517                 522                 527                 532

gac ccc ctg caa cag ggc cag gct ctg gca tct gcc ctg aaa aat aag      1748
Asp Pro Leu Gln Gln Gly Gln Ala Leu Ala Ser Ala Leu Lys Asn Lys
533                 538                 543                 548

aag aag atg cag aaa cgt gca gat aaa atc gcc agc aag ctg tct gat      1796
Lys Lys Met Gln Lys Arg Ala Asp Lys Ile Ala Ser Lys Leu Ser Asp
549                 554                 559                 564

tcc atg atg tct gct ctc gac ctc tct ggc aat gct gat gat ggt gtt      1844
Ser Met Met Ser Ala Leu Asp Leu Ser Gly Asn Ala Asp Asp Gly Val
565                 570                 575                 580

ggt gac taa tcgactg atctcacttc ccttccgctc caagcaccag ttccggtggt      1900
Gly Asp  *
581

acgggggaat accagtgaaa tagtttggtt ctccctgaag catctgcata ttgaaagaac    1960

gctttcccca ctgtgtgtct tctccccctc ctccagtaaa aacagtcccg gctgggtgct    2020

gtggctcacg tctgtaatcc cagcactttg ggaggccgag gtgggcggat cacctgaggt    2080

cgggagttcg agaccagcct ggccaacatg gtgaaacccc gtctctacta aaaatacaaa    2140

aaaatttagc cgtgcttagt ggcacctata gtcccagcta cttgggaggc tgaggcagga    2200
```

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gaatcgcctg aacctgggag actaaggcag gagaatcgcc tggacctggg aggcagaggt   2260

tgcagtgagc ccagacggca ccattgcact ctagcctggg caacaacacg aaactccgtc   2320

ccaaaaaaaa aaaaa                                                    2335
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<210> 225
<211> 716
<212> DNA
<213> Homo sapiens

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<222> (201)..(596)

<400> 225
tgcaggtacc ggtccggaat tcccgggtcg acgatttcgt cacgatcaca cagcaccaga    60

cttcggttcc ctatgcccct ggatggtgac ggcggattgg catcttggaa gcgatgcgag   120

agcgataagg ctggcgccgg cccgcaaaag ctgcaggagc atcgctaggt gttgccgcca   180

ccgggaagcg gggctgcagg    atg agt aag aga tac tta cag aaa gca aca    230
                         Met Ser Lys Arg Tyr Leu Gln Lys Ala Thr
                          1               5

aaa gga aaa ctg cta ata ata ata ttt att gta acc ttg tgg ggg aaa    278
Lys Gly Lys Leu Leu Ile Ile Ile Phe Ile Val Thr Leu Trp Gly Lys
 11                 16                  21                  26

gtt gta tcc agt gca aac cat cat aaa gct cac cat gtt aaa acg gga    326
Val Val Ser Ser Ala Asn His His Lys Ala His His Val Lys Thr Gly
 27                 32                  37                  42

act tgt gag gtg gtg gca ctc cac aga tgc tgt aat aag aac aag ata    374
Thr Cys Glu Val Val Ala Leu His Arg Cys Cys Asn Lys Asn Lys Ile
 43                 48                  53                  58

gaa gaa cgg tca caa aca gtc aag tgc tcc tgc ttc cct ggg cag gtg    422
Glu Glu Arg Ser Gln Thr Val Lys Cys Ser Cys Phe Pro Gly Gln Val
 59                 64                  69                  74

gca ggc acc acg cga gct gct cca tca tgt gtg gat gct tca ata gtg    470
Ala Gly Thr Thr Arg Ala Ala Pro Ser Cys Val Asp Ala Ser Ile Val
 75                 80                  85                  90

gaa cag aaa tgg tgg tgc cat atg cag cca tgt cta gag gga gaa gaa    518
Glu Gln Lys Trp Trp Cys His Met Gln Pro Cys Leu Glu Gly Glu Glu
 91                 96                  101                 106

tgt aaa gtt ctt ccg gat cgg aaa gga tgg agc tgt tcc tct ggg aat    566
Cys Lys Val Leu Pro Asp Arg Lys Gly Trp Ser Cys Ser Ser Gly Asn
107                 112                 117                 122
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aaa gtc aaa aca act agg gta acc cat taa c ccaggagaaa tcaagtgatc      617
Lys Val Lys Thr Thr Arg Val Thr His  *
123                 128

ctcaaggctg atgacattga acatgcgcat agaaacttaa ctcaactcct gaggtgatct    677

tgaagatttt tataccactt gaaagaggcg ctcaatagt                           716



     <210> 226
     <211> 6396
     <212> DNA
     <213> Homo sapiens

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     <222> (160)..(4983)

     <400> 226
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gacggtcgcc atggttccct ccccagccag tcccaggcgc ccggtgcact atgcggggca    120

cgtgcgcccc ccagctctaa tctgcgcgct gacaggagc  atg atc tgt gcc cag     174
                                            Met Ile Cys Ala Gln
                                             1

gcc agg gct ggc aag aat ctg tac cag aac agg ttt tta ggc ctg gcc      222
Ala Arg Ala Gly Lys Asn Leu Tyr Gln Asn Arg Phe Leu Gly Leu Ala
  6                 11                  16                  21

gcc atg gcg ttt cct tct aga aac tcc cag agc cta cgc cgg tgc aag      270
Ala Met Ala Phe Pro Ser Arg Asn Ser Gln Ser Leu Arg Arg Cys Lys
 22                 27                  32                  37

gag ccg atc cga tac agc tac aac ccc gac cag ttc cac aac atg gac      318
Glu Pro Ile Arg Tyr Ser Tyr Asn Pro Asp Gln Phe His Asn Met Asp
 38                 43                  48                  53

ctc agg ggc ggc ccc cac gat ggc gtc acc att ccc cgc tcc acc agc      366
Leu Arg Gly Gly Pro His Asp Gly Val Thr Ile Pro Arg Ser Thr Ser
 54                 59                  64                  69

gac act gac ctg gtc acc tcg gac agc cgc tcc acg ctc atg gtc agc      414
Asp Thr Asp Leu Val Thr Ser Asp Ser Arg Ser Thr Leu Met Val Ser
 70                 75                  80                  85

agc tcc tac tat tcc atc ggg cac tct cag gac ctg gtc atc cac tgg      462
Ser Ser Tyr Tyr Ser Ile Gly His Ser Gln Asp Leu Val Ile His Trp
 86                 91                  96                 101

gac ata aag gag gaa gtg gac gct ggg gac tgg att ggc atg tac ctc      510
Asp Ile Lys Glu Glu Val Asp Ala Gly Asp Trp Ile Gly Met Tyr Leu
102                107                 112                 117
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att gat gag gtc ttg tcc gaa aac ttt ctg gac tat aaa aac cgt gga        558
Ile Asp Glu Val Leu Ser Glu Asn Phe Leu Asp Tyr Lys Asn Arg Gly
118                 123                 128                 133

gtc aat ggt tct cat cgg ggc cag atc atc tgg aag atc gat gcc agc        606
Val Asn Gly Ser His Arg Gly Gln Ile Ile Trp Lys Ile Asp Ala Ser
134                 139                 144                 149

tcg tac ttt gtg gaa cct gaa act aag atc tgc ttc aaa tac tac cat        654
Ser Tyr Phe Val Glu Pro Glu Thr Lys Ile Cys Phe Lys Tyr Tyr His
150                 155                 160                 165

gga gtg agt ggg gcc ctg cga gca acc acc ccc agt gtc acg gtc aaa        702
Gly Val Ser Gly Ala Leu Arg Ala Thr Thr Pro Ser Val Thr Val Lys
166                 171                 176                 181

aac tcg gca gct cct att ttt aaa agc att ggt gct gat gag acc gtc        750
Asn Ser Ala Ala Pro Ile Phe Lys Ser Ile Gly Ala Asp Glu Thr Val
182                 187                 192                 197

caa gga caa gga agt cgg agg ctg atc agc ttc tct ctc tca gat ttc        798
Gln Gly Gln Gly Ser Arg Arg Leu Ile Ser Phe Ser Leu Ser Asp Phe
198                 203                 208                 213

caa gcc atg ggg ttg aag aaa ggg atg ttt ttc aac cca gac cct tat        846
Gln Ala Met Gly Leu Lys Lys Gly Met Phe Phe Asn Pro Asp Pro Tyr
214                 219                 224                 229

ctg aag att tcc att cag cct ggg aaa cac agc atc ttc ccc gcc ctc        894
Leu Lys Ile Ser Ile Gln Pro Gly Lys His Ser Ile Phe Pro Ala Leu
230                 235                 240                 245

cct cac cat gga cag gag agg aga tcc aag atc ata ggc aac acc gtg        942
Pro His His Gly Gln Glu Arg Arg Ser Lys Ile Ile Gly Asn Thr Val
246                 251                 256                 261

aac ccc atc tgg cag gcc gag caa ttc agt ttt gtg tcc ttg ccc act        990
Asn Pro Ile Trp Gln Ala Glu Gln Phe Ser Phe Val Ser Leu Pro Thr
262                 267                 272                 277

gac gtg ctg gaa att gag gtg aag gac aag ttt gcc aag agc cgc ccc       1038
Asp Val Leu Glu Ile Glu Val Lys Asp Lys Phe Ala Lys Ser Arg Pro
278                 283                 288                 293

atc atc aag cgc ttc ttg gga aag ctg tcg atg ccc gtt caa aga ctc       1086
Ile Ile Lys Arg Phe Leu Gly Lys Leu Ser Met Pro Val Gln Arg Leu
294                 299                 304                 309

ctg gag aga cac gcc ata ggg gat agg gtg gtc agc tac aca ctt ggc       1134
Leu Glu Arg His Ala Ile Gly Asp Arg Val Val Ser Tyr Thr Leu Gly
310                 315                 320                 325

cgc agg ctt cca aca gat cat gtg agt gga cag ctg caa ttc cga ttt       1182
Arg Arg Leu Pro Thr Asp His Val Ser Gly Gln Leu Gln Phe Arg Phe
326                 331                 336                 341

gag atc act tcc tcc atc cac cca gat gat gag gag att tcc ctg agt       1230
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Glu Ile Thr Ser Ser Ile His Pro Asp Asp Glu Glu Ile Ser Leu Ser
342   347   352   357

acc gag cct gag tca gcc caa att cag gac agc ccc atg aac aac ctg   1278
Thr Glu Pro Glu Ser Ala Gln Ile Gln Asp Ser Pro Met Asn Asn Leu
358   363   368   373

atg gaa agc ggc agt ggg gaa cct cgg tct gag gca cca gag tcc tct   1326
Met Glu Ser Gly Ser Gly Glu Pro Arg Ser Glu Ala Pro Glu Ser Ser
374   379   384   389

gag agc tgg aag cca gag cag ctg ggt gag ggc agt gtc ccc gat cgt   1374
Glu Ser Trp Lys Pro Glu Gln Leu Gly Glu Gly Ser Val Pro Asp Arg
390   395   400   405

cca ggg aac caa agc ata gag ctt tcc aga cca gct gag gaa gca gca   1422
Pro Gly Asn Gln Ser Ile Glu Leu Ser Arg Pro Ala Glu Glu Ala Ala
406   411   416   421

gtc atc acg gag gca gga gac cag ggc atg gtc tct gtg gga cct gaa   1470
Val Ile Thr Glu Ala Gly Asp Gln Gly Met Val Ser Val Gly Pro Glu
422   427   432   437

ggg gct ggg gag ctc ctg gcc cag gtg caa aag gac atc cag cct gcc   1518
Gly Ala Gly Glu Leu Leu Ala Gln Val Gln Lys Asp Ile Gln Pro Ala
438   443   448   453

ccc agt gca gaa gag ctg gcc gag cag ctg gac ctg ggt gag gag gca   1566
Pro Ser Ala Glu Glu Leu Ala Glu Gln Leu Asp Leu Gly Glu Glu Ala
454   459   464   469

tca gca ctg ctg ctg gaa gac ggt gaa gcc cca gcc agc acc aag gag   1614
Ser Ala Leu Leu Leu Glu Asp Gly Glu Ala Pro Ala Ser Thr Lys Glu
470   475   480   485

gag ccc ttg gag gag gaa gca acg acc cag agc cgg gct gga agg gaa   1662
Glu Pro Leu Glu Glu Glu Ala Thr Thr Gln Ser Arg Ala Gly Arg Glu
486   491   496   501

gaa gag gag aag gag cag gag gag gag gga gat gtg tcc acc ctg gag   1710
Glu Glu Glu Lys Glu Gln Glu Glu Glu Gly Asp Val Ser Thr Leu Glu
502   507   512   517

cag gga gag ggc agg ctg cag ctg cgg gcc tcg gtg aag aga aaa agc   1758
Gln Gly Glu Gly Arg Leu Gln Leu Arg Ala Ser Val Lys Arg Lys Ser
518   523   528   533

agg ccc tgc tcc ttg cct gtg tcc gag ctg gag acg gtg atc gcg tca   1806
Arg Pro Cys Ser Leu Pro Val Ser Glu Leu Glu Thr Val Ile Ala Ser
534   539   544   549

gcc tgc ggg gac ccc gag acc ccg cgg aca cac tac atc cgc atc cac   1854
Ala Cys Gly Asp Pro Glu Thr Pro Arg Thr His Tyr Ile Arg Ile His
550   555   560   565

acc ctg ctg cac agc atg ccc tcc gcc cag ggc ggc agc gcg gca gag   1902
Thr Leu Leu His Ser Met Pro Ser Ala Gln Gly Gly Ser Ala Ala Glu

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566                 571                 576                 581

gag gag gac ggc gcg gag gag gag tcc acc ctc aag gac tcc tcg gag        1950
Glu Glu Asp Gly Ala Glu Glu Glu Ser Thr Leu Lys Asp Ser Ser Glu
582                 587                 592                 597

aag gat ggg ctc agc gag gtg gac acg gtg gcc gct gac ccg tct gcc        1998
Lys Asp Gly Leu Ser Glu Val Asp Thr Val Ala Ala Asp Pro Ser Ala
598                 603                 608                 613

ctg gaa gag gac aga gaa gag ccc gag ggg gct act cca ggc acg gcg        2046
Leu Glu Glu Asp Arg Glu Glu Pro Glu Gly Ala Thr Pro Gly Thr Ala
614                 619                 624                 629

cac cct ggc cac tcc ggg ggc cac ttc ccc agc ctg gcc aat ggc gcg        2094
His Pro Gly His Ser Gly Gly His Phe Pro Ser Leu Ala Asn Gly Ala
630                 635                 640                 645

gcc cag gat ggc gac acg cac ccc agc acc ggg agc gag agc gac tcc        2142
Ala Gln Asp Gly Asp Thr His Pro Ser Thr Gly Ser Glu Ser Asp Ser
646                 651                 656                 661

agc ccc agg caa ggc ggg gac cac agt tgc gag ggc tgt gac gcg tcc        2190
Ser Pro Arg Gln Gly Gly Asp His Ser Cys Glu Gly Cys Asp Ala Ser
662                 667                 672                 677

tgc tgc agc ccc tcg tgc tac agc tcc tcg tgc tac agc acg tcc tgc        2238
Cys Cys Ser Pro Ser Cys Tyr Ser Ser Ser Cys Tyr Ser Thr Ser Cys
678                 683                 688                 693

tac agc agc tcg tgc tac agc gcc tcg tgc tac agc ccc tcc tgc tac        2286
Tyr Ser Ser Ser Cys Tyr Ser Ala Ser Cys Tyr Ser Pro Ser Cys Tyr
694                 699                 704                 709

aac ggc aac agg ttc gcc agc cac acg cgc ttc tcc tcc gtg gac agc        2334
Asn Gly Asn Arg Phe Ala Ser His Thr Arg Phe Ser Ser Val Asp Ser
710                 715                 720                 725

gcc aag atc tcc gag agc acg gtc ttc tcc tcg caa gac gac gag gag        2382
Ala Lys Ile Ser Glu Ser Thr Val Phe Ser Ser Gln Asp Asp Glu Glu
726                 731                 736                 741

gag gag aac agc gcg ttc gag tcg gta ccc gac tcc atg cag agc cct        2430
Glu Glu Asn Ser Ala Phe Glu Ser Val Pro Asp Ser Met Gln Ser Pro
742                 747                 752                 757

gag ctg gac ccg gag tcc acg aac ggc gct ggg ccg tgg caa gac gag        2478
Glu Leu Asp Pro Glu Ser Thr Asn Gly Ala Gly Pro Trp Gln Asp Glu
758                 763                 768                 773

ctg gcc gcc cct agc ggg cac gtg gaa aga agc ccg gaa ggt ctg gaa        2526
Leu Ala Ala Pro Ser Gly His Val Glu Arg Ser Pro Glu Gly Leu Glu
774                 779                 784                 789

tcc ccc gtg gca ggt cca agc aat cgg aga gaa ggt gaa tgt cct ata        2574
Ser Pro Val Ala Gly Pro Ser Asn Arg Arg Glu Gly Glu Cys Pro Ile
790                 795                 800                 805
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ctc cat aat tcc cag cca gta agc cag ctt cct tcc ctg agg cct gaa      2622
Leu His Asn Ser Gln Pro Val Ser Gln Leu Pro Ser Leu Arg Pro Glu
806                 811                 816                 821

cat cat cac tac cca aca atc gat gag cct ctt cca cca aac tgg gaa      2670
His His His Tyr Pro Thr Ile Asp Glu Pro Leu Pro Pro Asn Trp Glu
822                 827                 832                 837

gct cga att gac agc cac ggg cgg gtc ttt tat gtg gac cac gtg aac      2718
Ala Arg Ile Asp Ser His Gly Arg Val Phe Tyr Val Asp His Val Asn
838                 843                 848                 853

cgc aca acc acc tgg cag cgt ccg acg gca gca gcc acc ccg gat ggc      2766
Arg Thr Thr Thr Trp Gln Arg Pro Thr Ala Ala Ala Thr Pro Asp Gly
854                 859                 864                 869

atg cgg aga tcg ggg tcc atc cag cag atg gag caa ctc aac agg cgg      2814
Met Arg Arg Ser Gly Ser Ile Gln Gln Met Glu Gln Leu Asn Arg Arg
870                 875                 880                 885

tat caa aac att cag cga acc att gca aca gag agg tcc gaa gaa gat      2862
Tyr Gln Asn Ile Gln Arg Thr Ile Ala Thr Glu Arg Ser Glu Glu Asp
886                 891                 896                 901

tct ggc agc caa agc tgc gag caa gcc cca gca gga gga ggc gga ggt      2910
Ser Gly Ser Gln Ser Cys Glu Gln Ala Pro Ala Gly Gly Gly Gly Gly
902                 907                 912                 917

gga ggg agt gac tca gaa gcc gaa tct tcc cag tcc agc tta gat cta      2958
Gly Gly Ser Asp Ser Glu Ala Glu Ser Ser Gln Ser Ser Leu Asp Leu
918                 923                 928                 933

agg aga gag ggg tca ctt tct cca gtg aac tca caa aaa atc acc ttg      3006
Arg Arg Glu Gly Ser Leu Ser Pro Val Asn Ser Gln Lys Ile Thr Leu
934                 939                 944                 949

ctg ctg cag tcc cca gcg gtc aag ttc atc acc aac ccc gag ttc ttc      3054
Leu Leu Gln Ser Pro Ala Val Lys Phe Ile Thr Asn Pro Glu Phe Phe
950                 955                 960                 965

act gtg cta cat gcc aat tat agt gcc tac cga gtc ttc acc agt agc      3102
Thr Val Leu His Ala Asn Tyr Ser Ala Tyr Arg Val Phe Thr Ser Ser
966                 971                 976                 981

acc tgc tta aag cac atg att ctg aaa gtc cga cgg gat gct cgc aat      3150
Thr Cys Leu Lys His Met Ile Leu Lys Val Arg Arg Asp Ala Arg Asn
982                 987                 992                 997

ttt gaa cgc tac cag cac aac cgg gac ttg gtg aat ttc atc aac atg      3198
Phe Glu Arg Tyr Gln His Asn Arg Asp Leu Val Asn Phe Ile Asn Met
998                1003                1008                1013

ttc gca gac act cgg ctg gaa ctg ccc cgg ggc tgg gag atc aaa acg      3246
Phe Ala Asp Thr Arg Leu Glu Leu Pro Arg Gly Trp Glu Ile Lys Thr
1014               1019                1024                1029
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gac cag cag gga aag tct ttt ttc gtg gac cac aac agt cga gct acc      3294
Asp Gln Gln Gly Lys Ser Phe Phe Val Asp His Asn Ser Arg Ala Thr
1030                1035                1040                1045

act ttc att gac ccc cga atc cct ctt cag aac ggt cgt ctt ccc aat      3342
Thr Phe Ile Asp Pro Arg Ile Pro Leu Gln Asn Gly Arg Leu Pro Asn
1046                1051                1056                1061

cat cta act cac cga cag cac ctc cag agg ctc cga agt tac agc gct      3390
His Leu Thr His Arg Gln His Leu Gln Arg Leu Arg Ser Tyr Ser Ala
1062                1067                1072                1077

gga gag gcc tca gaa gtt tct aga aac aga gga gcc tct tta ctg gcc      3438
Gly Glu Ala Ser Glu Val Ser Arg Asn Arg Gly Ala Ser Leu Leu Ala
1078                1083                1088                1093

agg cca gga cac agc tta gta gct gct att cga agc caa cat caa cat      3486
Arg Pro Gly His Ser Leu Val Ala Ala Ile Arg Ser Gln His Gln His
1094                1099                1104                1109

gag tca ttg cca ctg gca tat aat gac aag att gtg gca ttt ctt cgc      3534
Glu Ser Leu Pro Leu Ala Tyr Asn Asp Lys Ile Val Ala Phe Leu Arg
1110                1115                1120                1125

cag cca aac att ttt gaa atg ctg caa gag cgt cag cca agc tta gca      3582
Gln Pro Asn Ile Phe Glu Met Leu Gln Glu Arg Gln Pro Ser Leu Ala
1126                1131                1136                1141

aga aac cac aca ctc agg gag aaa atc cat tac att cgg act gag ggt      3630
Arg Asn His Thr Leu Arg Glu Lys Ile His Tyr Ile Arg Thr Glu Gly
1142                1147                1152                1157

aat cac ggg ctt gag aag ttg tcc tgt gat gcg gat ctg gtc att ttg      3678
Asn His Gly Leu Glu Lys Leu Ser Cys Asp Ala Asp Leu Val Ile Leu
1158                1163                1168                1173

ctg agt ctc ttt gaa gaa gag att atg tcc tac gtc ccc ctg cag gct      3726
Leu Ser Leu Phe Glu Glu Glu Ile Met Ser Tyr Val Pro Leu Gln Ala
1174                1179                1184                1189

gcc ttc cac cct ggg tat agc ttc tct ccc cgc tgt tca ccc tgt tct      3774
Ala Phe His Pro Gly Tyr Ser Phe Ser Pro Arg Cys Ser Pro Cys Ser
1190                1195                1200                1205

tca cct cag aac tcc cca ggt tta cag aga gcc agt gca aga gcc cct      3822
Ser Pro Gln Asn Ser Pro Gly Leu Gln Arg Ala Ser Ala Arg Ala Pro
1206                1211                1216                1221

tcc ccc tac cga aga gac ttt gag gcc aag ctc cgc aat ttc tac aga      3870
Ser Pro Tyr Arg Arg Asp Phe Glu Ala Lys Leu Arg Asn Phe Tyr Arg
1222                1227                1232                1237

aaa ctg gaa gcc aaa gga ttt ggt cag ggt ccg ggg aaa att aag ctc      3918
Lys Leu Glu Ala Lys Gly Phe Gly Gln Gly Pro Gly Lys Ile Lys Leu
1238                1243                1248                1253

att att cgc cgg gat cat ttg ttg gag gga acc ttc aat cag gtg atg      3966
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Ile Ile Arg Arg Asp His Leu Leu Glu Gly Thr Phe Asn Gln Val Met
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gcc tat tcg cgg aaa gag ctc cag cga aac aag ctc tac gtc acc ttt 4014
Ala Tyr Ser Arg Lys Glu Leu Gln Arg Asn Lys Leu Tyr Val Thr Phe
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gtt gga gag gag ggc ctg gac tac agt ggc ccc tcg cgg gag ttc ttc 4062
Val Gly Glu Glu Gly Leu Asp Tyr Ser Gly Pro Ser Arg Glu Phe Phe
1286 1291 1296 1301

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Phe Leu Leu Ser Gln Glu Leu Phe Asn Pro Tyr Tyr Gly Leu Phe Glu
1302 1307 1312 1317

tac tcg gca aat gat act tac acg gtg cag atc agc ccc atg tcc gca 4158
Tyr Ser Ala Asn Asp Thr Tyr Thr Val Gln Ile Ser Pro Met Ser Ala
1318 1323 1328 1333

ttt gta gaa aac cat ctt gag tgg ttc agg ttt agc ggt cgc atc ctg 4206
Phe Val Glu Asn His Leu Glu Trp Phe Arg Phe Ser Gly Arg Ile Leu
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ggt ctg gct ctg atc cat cag tac ctt ctt gac gct ttc ttc acg agg 4254
Gly Leu Ala Leu Ile His Gln Tyr Leu Leu Asp Ala Phe Phe Thr Arg
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ccc ttc tac aag gca ctc ctg aga ctg ccc tgt gat ttg agt gac ctg 4302
Pro Phe Tyr Lys Ala Leu Leu Arg Leu Pro Cys Asp Leu Ser Asp Leu
1366 1371 1376 1381

gaa tat ttg gat gag gaa ttc cac cag agt ttg cag tgg atg aag gac 4350
Glu Tyr Leu Asp Glu Glu Phe His Gln Ser Leu Gln Trp Met Lys Asp
1382 1387 1392 1397

aac aac atc aca gac atc tta gac ctc act ttc act gtt aat gaa gag 4398
Asn Asn Ile Thr Asp Ile Leu Asp Leu Thr Phe Thr Val Asn Glu Glu
1398 1403 1408 1413

gtt ttt gga cag gtc acg gaa agg gag ttg aag tct gga gga gcc aac 4446
Val Phe Gly Gln Val Thr Glu Arg Glu Leu Lys Ser Gly Gly Ala Asn
1414 1419 1424 1429

aca cag gtg acg gag aaa aac aag aag gag tac atc gag cgc atg gtg 4494
Thr Gln Val Thr Glu Lys Asn Lys Lys Glu Tyr Ile Glu Arg Met Val
1430 1435 1440 1445

aag tgg cgg gtg gag cgc ggc gtg gta cag cag acc gag gcg ctg gtg 4542
Lys Trp Arg Val Glu Arg Gly Val Val Gln Gln Thr Glu Ala Leu Val
1446 1451 1456 1461

cgc ggc ttc tac gag gtt gta gac tcg agg ctg gtg tcc gtg ttt gat 4590
Arg Gly Phe Tyr Glu Val Val Asp Ser Arg Leu Val Ser Val Phe Asp
1462 1467 1472 1477

gcc agg gag ctg gag ctg gtg ata gct ggc acc gcg gaa atc gac cta 4638
Ala Arg Glu Leu Glu Leu Val Ile Ala Gly Thr Ala Glu Ile Asp Leu

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aat gac tgg cgg aat aac act gag tac cgg gga ggt tac cac gat ggg      4686
Asn Asp Trp Arg Asn Asn Thr Glu Tyr Arg Gly Gly Tyr His Asp Gly
1494                1499                1504                1509

cat ctt gtg atc cgc tgg ttc tgg gct gcg gtg gag cgc ttc aat aat      4734
His Leu Val Ile Arg Trp Phe Trp Ala Ala Val Glu Arg Phe Asn Asn
1510                1515                1520                1525

gag cag agg ctg aga tta ctg cag ttt gtc acg gga aca tcc agc gtg      4782
Glu Gln Arg Leu Arg Leu Leu Gln Phe Val Thr Gly Thr Ser Ser Val
1526                1531                1536                1541

ccc tac gaa ggc ttc gca gcc ctc cgt ggg agc aat ggg ctt cgg cgc      4830
Pro Tyr Glu Gly Phe Ala Ala Leu Arg Gly Ser Asn Gly Leu Arg Arg
1542                1547                1552                1557

ttc tgc ata gag aaa tgg ggg aaa att act tct ctc ccc agg gca cac      4878
Phe Cys Ile Glu Lys Trp Gly Lys Ile Thr Ser Leu Pro Arg Ala His
1558                1563                1568                1573

aca tgc ttc aac cga ctg gat ctt cca ccg tat ccc tcg tac tcc atg      4926
Thr Cys Phe Asn Arg Leu Asp Leu Pro Pro Tyr Pro Ser Tyr Ser Met
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ttg tat gaa aag ctg tta aca gca gta gag gaa acc agc acc ttt gga      4974
Leu Tyr Glu Lys Leu Leu Thr Ala Val Glu Glu Thr Ser Thr Phe Gly
1590                1595                1600                1605

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Leu Glu  *
1606

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atgattttta ttttcaaacc aaatcaggat tgacaaaagc tgtgcatgaa gaactgcctt    5150

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                             Met Thr Ile Thr Ser Phe Tyr Ala Val
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tgc ttt tac ctg ctg atg ctg gtc atg gtg gaa ggc ttt ggg ggg aag       459
Cys Phe Tyr Leu Leu Met Leu Val Met Val Glu Gly Phe Gly Gly Lys
10                  15                  20                  25

gag gca gtg ctg agg acg ctg agg gac acc ccg atg atg gtc cac aca       507
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Glu Ala Val Leu Arg Thr Leu Arg Asp Thr Pro Met Met Val His Thr
 26                 31                  36                  41

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Gly Pro Cys Cys Cys Cys Cys Pro Cys Cys Pro Arg Leu Leu Leu Thr
 42                 47                  52                  57

agg aag aag ctt cag ctg ctg atg ttg ggc cct ttc caa tac gcc ttc      603
Arg Lys Lys Leu Gln Leu Leu Met Leu Gly Pro Phe Gln Tyr Ala Phe
 58                 63                  68                  73

ttg aag ata acg ctg acc ctg gtg ggc ctg ttt ctc atc ccc gac ggc      651
Leu Lys Ile Thr Leu Thr Leu Val Gly Leu Phe Leu Ile Pro Asp Gly
 74                 79                  84                  89

atc tat gac cca gca gac att tct gag ggg agc aca gct cta tgg atc      699
Ile Tyr Asp Pro Ala Asp Ile Ser Glu Gly Ser Thr Ala Leu Trp Ile
 90                 95                 100                 105

aac act ttc ctc ggc gtg tcc aca ctg ctg gct ctc tgg acc ctg ggc      747
Asn Thr Phe Leu Gly Val Ser Thr Leu Leu Ala Leu Trp Thr Leu Gly
106                111                 116                 121

atc att tcc cgt caa gcc agg cta cac ctg ggt gag cag aac atg gga      795
Ile Ile Ser Arg Gln Ala Arg Leu His Leu Gly Glu Gln Asn Met Gly
122                127                 132                 137

gcc aaa ttt gct ctg ttc cag gtt ctc ctc atc ctg act gcc cta cag      843
Ala Lys Phe Ala Leu Phe Gln Val Leu Leu Ile Leu Thr Ala Leu Gln
138                143                 148                 153

ccc tcc atc ttc tca gtc ttg gcc aac ggt ggg cag att gct tgt tcg      891
Pro Ser Ile Phe Ser Val Leu Ala Asn Gly Gly Gln Ile Ala Cys Ser
154                159                 164                 169

cct ccc tat tcc tct aaa acc agg tct caa gtg atg aat tgc cac ctc      939
Pro Pro Tyr Ser Ser Lys Thr Arg Ser Gln Val Met Asn Cys His Leu
170                175                 180                 185

ctc ata ctg gag act ttt cta atg act gtg ctg aca cga atg tac tac      987
Leu Ile Leu Glu Thr Phe Leu Met Thr Val Leu Thr Arg Met Tyr Tyr
186                191                 196                 201

cga agg aaa gac cac aag gtt ggg tat gaa act ttc tct tct cca gac     1035
Arg Arg Lys Asp His Lys Val Gly Tyr Glu Thr Phe Ser Ser Pro Asp
202                207                 212                 217

ctg gac ttg aac ctc aaa gcc taa ggtggatggc ttggacaatg aaaggatgct    1089
Leu Asp Leu Asn Leu Lys Ala  *
218                223

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tgccatacac tccagcctgg gtgatacagc cagaccctgc ctctggaaaa aaaagaaagc   1509

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                     Met His Ala Tyr Val Ser Leu Asp Pro Leu Glu
                      1               5

cgg ccg cct act act act ata cgg ctg cga gaa gac gac aga agg gcg      160
Arg Pro Pro Thr Thr Thr Ile Arg Leu Arg Glu Asp Asp Arg Arg Ala
 12                 17                  22                  27

act ctc acc tct cat gtg ctt ctg gcc agt agg tct ttg ttc tgg tcc      208
Thr Leu Thr Ser His Val Leu Leu Ala Ser Arg Ser Leu Phe Trp Ser
 28                 33                  38                  43

aac gac agg agt agg ctt gta ttt aaa agc ggc ccc tcc tct cct gtg      256
Asn Asp Arg Ser Arg Leu Val Phe Lys Ser Gly Pro Ser Ser Pro Val
 44                 49                  54                  59

gcc aca gaa cac agg cgt gct tgg att ctt gac aag cag ccc tgc tcc      304
Ala Thr Glu His Arg Arg Ala Trp Ile Leu Asp Lys Gln Pro Cys Ser
 60                 65                  70                  75

tgc aga gga gac agc cac att tgg aat tgg gca ccg aga aga cct gag      352
Cys Arg Gly Asp Ser His Ile Trp Asn Trp Ala Pro Arg Arg Pro Glu
 76                 81                  86                  91

aaa aac cca ctc tct ctt ttt ttt ttt gag acg gag tct tgc tct gtc      400
Lys Asn Pro Leu Ser Leu Phe Phe Phe Glu Thr Glu Ser Cys Ser Val
 92                 97                 102                 107

acc cag gct gga gtg cag tgg cac gat ctc ggc tca ctg caa cct ccg      448
Thr Gln Ala Gly Val Gln Trp His Asp Leu Gly Ser Leu Gln Pro Pro
108                113                 118                 123
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cct ccc aag ttc aag caa ttc tcc tgc ccc agc ctc ctg att agc tgg      496
Pro Pro Lys Phe Lys Gln Phe Ser Cys Pro Ser Leu Leu Ile Ser Trp
124                 129                 134                 139

gat tac agg cgt gtg cca cca tgc cca gct aat ttt tgt gtt ttt agt      544
Asp Tyr Arg Arg Val Pro Pro Cys Pro Ala Asn Phe Cys Val Phe Ser
140                 145                 150                 155

aga gac ggg gtt tca cca tgt tgg tca ggc tgg tct tga actcctgacg       593
Arg Asp Gly Val Ser Pro Cys Trp Ser Gly Trp Ser  *
156                 161                 166

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     <220>
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     <222> (56)..(823)

     <400> 229
agtgtgcgtg gaattcgctc agaacagcaa ctgctgaggc tgccttggga agagg atg      58
                                                             Met
                                                               1

atc cta aac aaa gct ctg atg ctg ggg gcc ctc gcc ctg acc acc gtg      106
Ile Leu Asn Lys Ala Leu Met Leu Gly Ala Leu Ala Leu Thr Thr Val
  2                   7                  12                  17

atg agc cct tgt gga ggt gaa gac att gtg gct gac cat gtt gcc tct      154
Met Ser Pro Cys Gly Gly Glu Asp Ile Val Ala Asp His Val Ala Ser
 18                  23                  28                  33

tac ggt gta aac ttg tac cag tct tat ggt ccc tct ggg cag tac agc      202
Tyr Gly Val Asn Leu Tyr Gln Ser Tyr Gly Pro Ser Gly Gln Tyr Ser
 34                  39                  44                  49

cat gaa ttt gat gga gac gag gag ttc tat gtg gac ctg gag agg aag      250
His Glu Phe Asp Gly Asp Glu Glu Phe Tyr Val Asp Leu Glu Arg Lys
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 50                  55                  60                  65

gag act gtc tgg cag ttg cct ctg ttc cgc aga ttt aga aga ttt gac       298
Glu Thr Val Trp Gln Leu Pro Leu Phe Arg Arg Phe Arg Arg Phe Asp
 66                  71                  76                  81

ccg caa ttt gca ctg aca aac atc gct gtg cta aaa cat aac ttg aac       346
Pro Gln Phe Ala Leu Thr Asn Ile Ala Val Leu Lys His Asn Leu Asn
 82                  87                  92                  97

atc gtg att aaa cgc tcc aac tct acc gct gct acc aat gag gtt cct       394
Ile Val Ile Lys Arg Ser Asn Ser Thr Ala Ala Thr Asn Glu Val Pro
 98                 103                 108                 113

gag gtc aca gtg ttt tcc aag tct ccc gtg aca ctg ggt cag ccc aac       442
Glu Val Thr Val Phe Ser Lys Ser Pro Val Thr Leu Gly Gln Pro Asn
114                 119                 124                 129

acc ctc atc tgt ctt gtg gac aac atc ttt cct cct gtg gtc aac atc       490
Thr Leu Ile Cys Leu Val Asp Asn Ile Phe Pro Pro Val Val Asn Ile
130                 135                 140                 145

acc tgg ctg agc aat ggg cac tca gtc aca gaa ggt gtt tct gag acc       538
Thr Trp Leu Ser Asn Gly His Ser Val Thr Glu Gly Val Ser Glu Thr
146                 151                 156                 161

agc ttc ctc tcc aag agt gat cat tcc ttc ttc aag atc agt tac ctc       586
Ser Phe Leu Ser Lys Ser Asp His Ser Phe Phe Lys Ile Ser Tyr Leu
162                 167                 172                 177

acc ttc ctc cct tct gct gat gag att tat gac tgc aag gtg gag cac       634
Thr Phe Leu Pro Ser Ala Asp Glu Ile Tyr Asp Cys Lys Val Glu His
178                 183                 188                 193

tgg ggc ctg gat gag cct ctt ctg aaa cac tgg gag cct gag att cca       682
Trp Gly Leu Asp Glu Pro Leu Leu Lys His Trp Glu Pro Glu Ile Pro
194                 199                 204                 209

aca cct atg tca gag ctc aca gag act gtg gtc tgc gcc ctg ggg ttg       730
Thr Pro Met Ser Glu Leu Thr Glu Thr Val Val Cys Ala Leu Gly Leu
210                 215                 220                 225

tct gtg ggc ctc gtg ggc att gtg gtg ggg acc gtc ttg atc atc cga       778
Ser Val Gly Leu Val Gly Ile Val Val Gly Thr Val Leu Ile Ile Arg
226                 231                 236                 241

ggc ctg cgt tca gtt ggt gct tcc aga cac caa ggg ccc ttg tga atc       826
Gly Leu Arg Ser Val Gly Ala Ser Arg His Gln Gly Pro Leu  *
242                 247                 252

ccatcctgaa aaggaaggtg ttacctacta agagatgcct ggggtaagcc gcccagctac     886

ctaattcctc agtaacatcg atctaaaatc tccatggaag caataaattc cctttaagag     946

aaaaaaaaaa                                                            956
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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (61)..(1338)

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atg gcc gga gcc gag ggc gcc gct ggg cgg cag tcg gag ctg gag ccc       108
Met Ala Gly Ala Glu Gly Ala Ala Gly Arg Gln Ser Glu Leu Glu Pro
1               5                   10                  15

gtg gta tcg ttg gtc gac gtc ctt gag gag gac gag gag ctg gag aat       156
Val Val Ser Leu Val Asp Val Leu Glu Glu Asp Glu Glu Leu Glu Asn
17                  22                  27                  32

gag gcg tgc gct gtc ctg ggc ggc agc gac tcc gag aag tgc tcc tac       204
Glu Ala Cys Ala Val Leu Gly Gly Ser Asp Ser Glu Lys Cys Ser Tyr
33                  38                  43                  48

tct cag ggc tca gta aag aga caa gca cta tat gcc tgt agt acc tgc       252
Ser Gln Gly Ser Val Lys Arg Gln Ala Leu Tyr Ala Cys Ser Thr Cys
49                  54                  59                  64

acc cca gag gga gaa gaa cca gca gga att tgt tta gct tgc agt tat       300
Thr Pro Glu Gly Glu Glu Pro Ala Gly Ile Cys Leu Ala Cys Ser Tyr
65                  70                  75                  80

gaa tgt cat gga agt cac aaa cta ttt gag cta tac aca aaa aga aat       348
Glu Cys His Gly Ser His Lys Leu Phe Glu Leu Tyr Thr Lys Arg Asn
81                  86                  91                  96

ttt cgt tgt gat tgt gga aac agc aag ttt aaa aat ttg gaa tgc aaa       396
Phe Arg Cys Asp Cys Gly Asn Ser Lys Phe Lys Asn Leu Glu Cys Lys
97                  102                 107                 112

tta ctt cct gac aaa gca aag gta aat tct ggc aat aag tac aat gac       444
Leu Leu Pro Asp Lys Ala Lys Val Asn Ser Gly Asn Lys Tyr Asn Asp
113                 118                 123                 128

aac ttt ttt gga ttg tac tgc att tgc aag aga cct tat cct gat cct       492
Asn Phe Phe Gly Leu Tyr Cys Ile Cys Lys Arg Pro Tyr Pro Asp Pro
129                 134                 139                 144

gaa gac gag att cca gat gag atg atc cag tgc gta gtc tgt gaa gac       540
Glu Asp Glu Ile Pro Asp Glu Met Ile Gln Cys Val Val Cys Glu Asp
145                 150                 155                 160

tgg ttc cat gga agg cat ctt ggt gcc att ccc cct gag agt ggg gat       588
Trp Phe His Gly Arg His Leu Gly Ala Ile Pro Pro Glu Ser Gly Asp
161                 166                 171                 176
```

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ttt cag gag atg gta tgc cag gcc tgc atg aaa cgt tgt tct ttt ttg      636
Phe Gln Glu Met Val Cys Gln Ala Cys Met Lys Arg Cys Ser Phe Leu
177                 182                 187                 192

tgg gct tat gct gca caa ttg gca gta acc aaa ata tcc act gag gat      684
Trp Ala Tyr Ala Ala Gln Leu Ala Val Thr Lys Ile Ser Thr Glu Asp
193                 198                 203                 208

gat gga ttg gtg cgg aac att gat gga ata ggt gat cag gaa gtt atc      732
Asp Gly Leu Val Arg Asn Ile Asp Gly Ile Gly Asp Gln Glu Val Ile
209                 214                 219                 224

aaa cct gaa aat gga gag cat caa gat agt acc ctc aaa gag gat gtt      780
Lys Pro Glu Asn Gly Glu His Gln Asp Ser Thr Leu Lys Glu Asp Val
225                 230                 235                 240

cca gaa cag gga aag gat gat gtc cgg gag gtt aaa gta gag cag aac      828
Pro Glu Gln Gly Lys Asp Asp Val Arg Glu Val Lys Val Glu Gln Asn
241                 246                 251                 256

agt gaa cca tgt gcc ggc tct agt tct gaa tct gat ctc cag aca gtg      876
Ser Glu Pro Cys Ala Gly Ser Ser Ser Glu Ser Asp Leu Gln Thr Val
257                 262                 267                 272

ttt aag aat gaa agc ctc aac gca gaa tca aaa tct ggc tgc aaa ctt      924
Phe Lys Asn Glu Ser Leu Asn Ala Glu Ser Lys Ser Gly Cys Lys Leu
273                 278                 283                 288

cag gag ctt aaa gct aag cag ctt ata aag aaa gac act gcc acc tat      972
Gln Glu Leu Lys Ala Lys Gln Leu Ile Lys Lys Asp Thr Ala Thr Tyr
289                 294                 299                 304

tgg ccc ctg aac tgg cgt agc aag ttg tgt acc tgc caa gac tgt atg     1020
Trp Pro Leu Asn Trp Arg Ser Lys Leu Cys Thr Cys Gln Asp Cys Met
305                 310                 315                 320

aaa atg tat gga gat cta gat gtc tta ttc ctg aca gat gaa tac gac     1068
Lys Met Tyr Gly Asp Leu Asp Val Leu Phe Leu Thr Asp Glu Tyr Asp
321                 326                 331                 336

aca gtt ctg gct tat gaa aac aaa ggg aag att gcc cag gcc act gac     1116
Thr Val Leu Ala Tyr Glu Asn Lys Gly Lys Ile Ala Gln Ala Thr Asp
337                 342                 347                 352

agg agc gat ccc cta atg gat acc ctt agc agc atg aat aga gtc cag     1164
Arg Ser Asp Pro Leu Met Asp Thr Leu Ser Ser Met Asn Arg Val Gln
353                 358                 363                 368

caa gtg gaa ctc att tgt gaa tac aat gat ttg aag act gaa ctt aaa     1212
Gln Val Glu Leu Ile Cys Glu Tyr Asn Asp Leu Lys Thr Glu Leu Lys
369                 374                 379                 384

gac tat ctc aag aga ttt gct gat gaa ggc acg gtt gtt aag aga gag     1260
Asp Tyr Leu Lys Arg Phe Ala Asp Glu Gly Thr Val Val Lys Arg Glu
385                 390                 395                 400
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gac att cag cag ttc ttt gaa gag ttt cag tca aaa aag aga aga aga      1308
Asp Ile Gln Gln Phe Phe Glu Glu Phe Gln Ser Lys Lys Arg Arg Arg
401                 406                 411                 416

gtg gat ggg atg cag tat tac tgc agc tag a gtggagtatg aagctttctc      1359
Val Asp Gly Met Gln Tyr Tyr Cys Ser  *
417                 422

attcaagcca atgaaaatgc gcttcccatt cttggaataa aagaggtgtg gttcacattt   1419

ggcccccttt ccgtcctcct ctgtttggag aggcctcgcg ctcccttcat tctctttagc   1479

tgcagtagcc accgtgtgga tgctgacttc acagccagcg tcctctgtga ctcagctgat   1539

gcagctcatt ccacagactt cgccagtgta ctcctactcc agtgcaccca gggttatttg   1599

catagttttt aagtttgatt ttgttttgag aaagcaaatt tggtgtcttt gtttaatgat   1659

ctgttatttc actcccagat gtgtgt                                        1685




<210> 231
<211> 1593
<212> DNA
<213> Homo sapiens

<220>
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<222> (151)..(1437)

<400> 231
gcacaggact ttgcctcggt ccagctatgt gttcagcccg gaatctgaag tgtcagccca      60

ggcgtctctg aagaccgact aaagccccag gaagggaagg gaagtgtgct aaggcgggat     120

gtgtcagtca aagcagcctc tgaacttctc    atg aaa ctc tca gcg gaa agc       171
                                    Met Lys Leu Ser Ala Glu Ser
                                    1               5

tac aag gaa aca cag atg gtg aag att aaa gag gaa ccc atg gag gtt      219
Tyr Lys Glu Thr Gln Met Val Lys Ile Lys Glu Glu Pro Met Glu Val
8                   13                  18                  23

gac atc cag gac tcc cat gtc tcg ata tca ccc agc cgg aat gtt ggc      267
Asp Ile Gln Asp Ser His Val Ser Ile Ser Pro Ser Arg Asn Val Gly
24                  29                  34                  39

tac agc act tta atc ggg cga gag aaa acc gaa ccc tta cag aag atg      315
Tyr Ser Thr Leu Ile Gly Arg Glu Lys Thr Glu Pro Leu Gln Lys Met
40                  45                  50                  55

cca gag ggc aga gta ccc cca gag aga aac ctc ttc agt cag gat atc      363
Pro Glu Gly Arg Val Pro Pro Glu Arg Asn Leu Phe Ser Gln Asp Ile
56                  61                  66                  71
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tct gtg aaa atg gct tcc gag ctc ctc ttt caa ctg tca gaa aaa gtg      411
Ser Val Lys Met Ala Ser Glu Leu Leu Phe Gln Leu Ser Glu Lys Val
 72                 77                  82                  87

agc aaa gag cac aat cat aca aaa gaa aac acc atc cgg acc acg acc      459
Ser Lys Glu His Asn His Thr Lys Glu Asn Thr Ile Arg Thr Thr Thr
 88                 93                  98                 103

agc cct ttc ttt tca gaa gac aca ttt aga caa tca cca ttc acc tcc      507
Ser Pro Phe Phe Ser Glu Asp Thr Phe Arg Gln Ser Pro Phe Thr Ser
104                109                 114                 119

aat tca aaa gaa ctg ctg ccc agt gac tcc gtg ctg cac gga aga ata      555
Asn Ser Lys Glu Leu Leu Pro Ser Asp Ser Val Leu His Gly Arg Ile
120                125                 130                 135

tca gct cca gaa aca gaa aag ata gtc cta gag gca gga aat gga tta      603
Ser Ala Pro Glu Thr Glu Lys Ile Val Leu Glu Ala Gly Asn Gly Leu
136                141                 146                 151

cca tcc tgg aaa ttc aat gac cag ctt ttt ccc tgt gac gtg tgt ggg      651
Pro Ser Trp Lys Phe Asn Asp Gln Leu Phe Pro Cys Asp Val Cys Gly
152                157                 162                 167

aaa gtg ttt ggc cga cag cag aca ttg tcc cga cac ctc tcg ctg cac      699
Lys Val Phe Gly Arg Gln Gln Thr Leu Ser Arg His Leu Ser Leu His
168                173                 178                 183

aca gag gaa aga aaa tac aaa tgc cac ttg tgc ccc tat gct gct aag      747
Thr Glu Glu Arg Lys Tyr Lys Cys His Leu Cys Pro Tyr Ala Ala Lys
184                189                 194                 199

tgc cgt gca aat ctg aac cag cac ttg acc gtc cat tcc gtg aag ctg      795
Cys Arg Ala Asn Leu Asn Gln His Leu Thr Val His Ser Val Lys Leu
200                205                 210                 215

gtg agt aca gac acc gag gac att gtc agc gcc gtc acc tct gaa ggc      843
Val Ser Thr Asp Thr Glu Asp Ile Val Ser Ala Val Thr Ser Glu Gly
216                221                 226                 231

agt gat ggg aag aaa cat cct tat tat tac agt tgt cac gtg tgt gga      891
Ser Asp Gly Lys Lys His Pro Tyr Tyr Tyr Ser Cys His Val Cys Gly
232                237                 242                 247

ttt gag acc gag ctc aat gtc cag ttt gtc agc cac atg tca ctc cac      939
Phe Glu Thr Glu Leu Asn Val Gln Phe Val Ser His Met Ser Leu His
248                253                 258                 263

gtg gac aag gag cag tgg atg ttt tcg atc tgc tgc act gcc tgc gac      987
Val Asp Lys Glu Gln Trp Met Phe Ser Ile Cys Cys Thr Ala Cys Asp
264                269                 274                 279

ttc gtc acc atg gag gaa gca gag ata aag act cac att ggc acc aag     1035
Phe Val Thr Met Glu Glu Ala Glu Ile Lys Thr His Ile Gly Thr Lys
280                285                 290                 295

cac aca ggg gaa gac agg aag acc ccc agc gaa tca aat agc ccc tct     1083
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His Thr Gly Glu Asp Arg Lys Thr Pro Ser Glu Ser Asn Ser Pro Ser
296                 301                 306                 311

tca tcc tcc ctc tca gct ctg agt gat tca gcc aac agc aaa gat gat      1131
Ser Ser Ser Leu Ser Ala Leu Ser Asp Ser Ala Asn Ser Lys Asp Asp
312                 317                 322                 327

tca gat ggc tcc cag aaa aac aag ggc ggg aac aat ctg ctg gtc atc      1179
Ser Asp Gly Ser Gln Lys Asn Lys Gly Gly Asn Asn Leu Leu Val Ile
328                 333                 338                 343

tct gtc atg cct ggg agc cag ccc tca ctg aac agt gag gaa aag cca      1227
Ser Val Met Pro Gly Ser Gln Pro Ser Leu Asn Ser Glu Glu Lys Pro
344                 349                 354                 359

gag aaa ggg ttc gaa tgt gtt ttt tgc aac ttt gtc tgc aag acg aag      1275
Glu Lys Gly Phe Glu Cys Val Phe Cys Asn Phe Val Cys Lys Thr Lys
360                 365                 370                 375

aac atg ttt gag cgt cat ctg cag ata cac ctc atc acc cgg atg ttt      1323
Asn Met Phe Glu Arg His Leu Gln Ile His Leu Ile Thr Arg Met Phe
376                 381                 386                 391

gag tgt gat gtg tgc cac aag ttc atg aag acc ccc gaa cag ctg ctg      1371
Glu Cys Asp Val Cys His Lys Phe Met Lys Thr Pro Glu Gln Leu Leu
392                 397                 402                 407

gag cat aag aaa tgc cac act gtc ccc acc ggt ggg ctc aat tta tgt      1419
Glu His Lys Lys Cys His Thr Val Pro Thr Gly Gly Leu Asn Leu Cys
408                 413                 418                 423

tct agg atg acc aag tag aagaat actttgaaaa aattgataat gccttctggc      1473
Ser Arg Met Thr Lys  *
424                 429

tatacagtgc ccattctgca tttattccac caaccgcccc gctgccatgg agtgccacct    1533

caagacccac tacaagatgg agtacaagtg ccggatctgc cagacggtga aggccaaccc    1593



      <210> 232
      <211> 1234
      <212> DNA
      <213> Homo sapiens

      <220>
      <221> CDS
      <222> (342)..(1046)

      <400> 232
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gagcattctc tttctttaca aatctgatgt ggggagagga aagatgaatt tttatttcat     120

aaagccacta gatcagcaat tctgacccct gtgaccacag agttcccatc cacgcggctg     180
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acgacatgac cagacaagtt cgggggttca gagcatctcc atccccctttt tggggactca    240

gagcgtctcc atcccacttt tggggattca gagcatcttg gtgaaacctc gggggctcag    300

agctcccacc tgaagaagcc ctctttattc aggtggcctc c    atg aac cag cgc      353
                                                 Met Asn Gln Arg
                                                  1

cgt gtg gat ttc tac ctt gcc tcc atc gaa gac atg ctg gtg gcc atc      401
Arg Val Asp Phe Tyr Leu Ala Ser Ile Glu Asp Met Leu Val Ala Ile
  5                  10                  15                  20

ggc ggc cgg aat gag aac gga gcg ctc tct tca gta gag acg tac agt      449
Gly Gly Arg Asn Glu Asn Gly Ala Leu Ser Ser Val Glu Thr Tyr Ser
 21                  26                  31                  36

ccc aag act gac tcc tgg tcc tat gtg gcc ggc ttg cca agg ttc acg      497
Pro Lys Thr Asp Ser Trp Ser Tyr Val Ala Gly Leu Pro Arg Phe Thr
 37                  42                  47                  52

tac ggc cac gcg ggc acc atc tac aaa gac ttc gtg tac atc tcg ggg      545
Tyr Gly His Ala Gly Thr Ile Tyr Lys Asp Phe Val Tyr Ile Ser Gly
 53                  58                  63                  68

ggc cac gac tac caa att ggc ccc tac cgc aag aac ctg cta tgc tac      593
Gly His Asp Tyr Gln Ile Gly Pro Tyr Arg Lys Asn Leu Leu Cys Tyr
 69                  74                  79                  84

gac cac cgg aca gac gtg tgg gag gag cgg cgg ccc atg acc acg gcg      641
Asp His Arg Thr Asp Val Trp Glu Glu Arg Arg Pro Met Thr Thr Ala
 85                  90                  95                 100

cgc ggc tgg cac agc atg tgc agc ctg ggt gac agc atc tac tcc atc      689
Arg Gly Trp His Ser Met Cys Ser Leu Gly Asp Ser Ile Tyr Ser Ile
101                 106                 111                 116

ggg ggc agc gat gac aac atc gag tcc atg gag cgc ttc gac gtg ctg      737
Gly Gly Ser Asp Asp Asn Ile Glu Ser Met Glu Arg Phe Asp Val Leu
117                 122                 127                 132

ggc gtg gag gcc tac agc ccg cag tgc aac cag tgg acc cgc gtg gcg      785
Gly Val Glu Ala Tyr Ser Pro Gln Cys Asn Gln Trp Thr Arg Val Ala
133                 138                 143                 148

ccg ctg ctg cac gcc aac agc gag tcg ggc gtg gca gtg tgg gag ggc      833
Pro Leu Leu His Ala Asn Ser Glu Ser Gly Val Ala Val Trp Glu Gly
149                 154                 159                 164

cgc atc tac atc ctg ggc ggc tac agc tgg gag aac act gcc ttc tcc      881
Arg Ile Tyr Ile Leu Gly Gly Tyr Ser Trp Glu Asn Thr Ala Phe Ser
165                 170                 175                 180

aag acc gtg cag gtg tac gac cgc gag gcc gac aag tgg agc agg ggc      929
Lys Thr Val Gln Val Tyr Asp Arg Glu Ala Asp Lys Trp Ser Arg Gly
181                 186                 191                 196
```

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gtc gac ctg ccc aag gcc atc gct ggc ggg tcc gcc tgt gtc tgc gcc        977
Val Asp Leu Pro Lys Ala Ile Ala Gly Gly Ser Ala Cys Val Cys Ala
197                 202                 207                 212

ctg gag cca cgg cca gag gac aag aag aag aaa ggc aaa ggc aag agg       1025
Leu Glu Pro Arg Pro Glu Asp Lys Lys Lys Lys Gly Lys Gly Lys Arg
213                 218                 223                 228

cac cag gac cgg ggc cag tga cc ctagctgcgc ctcttgggac catcctcacc       1078
His Gln Asp Arg Gly Gln  *
229                 234

gtcacctccc agggctctgt agaccagcag caacttctta gtattccgga aacattatgt     1138

acaacttagc agcttttttt acttttatga ttattggtat ttctatgata tcacagtaac     1198

caattaaata ctatctgtaa ctttaaaaaa aaaaaa                               1234
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10034240.010402

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<210> 233
<211> 3542
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(3168)

<400> 233
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Met Glu Ala Glu Ala Ala Ala Ala Pro Glu Arg Glu Gly Gly Ser Cys
  1               5                  10

gtg ctg tgc tgc gga gac ctg gag gcc acg gcg ctg ggg ccg ctg cga        96
Val Leu Cys Cys Gly Asp Leu Glu Ala Thr Ala Leu Gly Pro Leu Arg
 17                  22                  27                  32

cca ccc ggt gtg cta ccg ctg ctc tac caa gat gcg ggt gct ctg cga       144
Pro Pro Gly Val Leu Pro Leu Leu Tyr Gln Asp Ala Gly Ala Leu Arg
 33                  38                  43                  48

gca gcg cta ctg cgc cgt gtg ccg cga gga gct gcg cca gct gct ggc       192
Ala Ala Leu Leu Arg Arg Val Pro Arg Gly Ala Ala Pro Ala Ala Gly
 49                  54                  59                  64

tgt ggg cac ctg gct gga gcc cgt tgg ttt gct gag ctt aga gat ttg       240
Cys Gly His Leu Ala Gly Ala Arg Trp Phe Ala Glu Leu Arg Asp Leu
 65                  70                  75                  80

ttt gct tcc agc att gtg aaa ttc ccc cgg ttt gtt cat aga agg ctt       288
Phe Ala Ser Ser Ile Val Lys Phe Pro Arg Phe Val His Arg Arg Leu
 81                  86                  91                  96

cgg ctg gtg aca tct gcc agg aat cta act ttc ttc tcc cca gaa gtg       336
Arg Leu Val Thr Ser Ala Arg Asn Leu Thr Phe Phe Ser Pro Glu Val
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 97                  102                 107                 112

atg cag agc agt att gag gca gac act ggc ttc ctc gcc cgc ctg cct       384
Met Gln Ser Ser Ile Glu Ala Asp Thr Gly Phe Leu Ala Arg Leu Pro
113                 118                 123                 128

gct gct tcg gga gct gtg gtg ggg aag tgg ccc tgt ctg gtt ccc ggg       432
Ala Ala Ser Gly Ala Val Val Gly Lys Trp Pro Cys Leu Val Pro Gly
129                 134                 139                 144

agt cca ggt act cag ctc ccc gag gag gct cgc gct ctg cgt ccc agc       480
Ser Pro Gly Thr Gln Leu Pro Glu Glu Ala Arg Ala Leu Arg Pro Ser
145                 150                 155                 160

agc acc ctg agt ggc tcc gct cag ctc ccc gag gag gct cgt gct ctg       528
Ser Thr Leu Ser Gly Ser Ala Gln Leu Pro Glu Glu Ala Arg Ala Leu
161                 166                 171                 176

ggt ccc agc agc acc ctg agt ggc tgc aca gat tgc gcc tgt gag ggt       576
Gly Pro Ser Ser Thr Leu Ser Gly Cys Thr Asp Cys Ala Cys Glu Gly
177                 182                 187                 192

cgg gct gga gag gcg ccc ttg gga gtg gtc ttt ggg aag aag ctt cct       624
Arg Ala Gly Glu Ala Pro Leu Gly Val Val Phe Gly Lys Lys Leu Pro
193                 198                 203                 208

gcc ttt gcc acc atc ccc atc cac cag ctg cag cat gag aag aaa tat       672
Ala Phe Ala Thr Ile Pro Ile His Gln Leu Gln His Glu Lys Lys Tyr
209                 214                 219                 224

gat atc tac ttt gca gat gga aag gtg tac gca ttg tac agg cag ctg       720
Asp Ile Tyr Phe Ala Asp Gly Lys Val Tyr Ala Leu Tyr Arg Gln Leu
225                 230                 235                 240

ctg cag cac gag tgc ccg cgg tgc ccc gag ctg cca cct ttc agc ctc       768
Leu Gln His Glu Cys Pro Arg Cys Pro Glu Leu Pro Pro Phe Ser Leu
241                 246                 251                 256

ttc ggg gac ctg gag cag cac atg cgg agg cag cat gag ctc ttc tgc       816
Phe Gly Asp Leu Glu Gln His Met Arg Arg Gln His Glu Leu Phe Cys
257                 262                 267                 272

tgc cgt ctg tgc ctc cag cac ctc cag atc ttc aca tat gag cgc aag       864
Cys Arg Leu Cys Leu Gln His Leu Gln Ile Phe Thr Tyr Glu Arg Lys
273                 278                 283                 288

tgg tac tcg cgc aag gac ctg gcc cgg cat cgc atg cag ggt gac ccc       912
Trp Tyr Ser Arg Lys Asp Leu Ala Arg His Arg Met Gln Gly Asp Pro
289                 294                 299                 304

gat gac acg tcg cac cgt ggg cac ccg ctc tgc aag ttc tgt gac gag       960
Asp Asp Thr Ser His Arg Gly His Pro Leu Cys Lys Phe Cys Asp Glu
305                 310                 315                 320

cgc tac ctg gac aat gat gag ctg ctt aag cac ctg cgc cgc gac cac      1008
Arg Tyr Leu Asp Asn Asp Glu Leu Leu Lys His Leu Arg Arg Asp His
321                 326                 331                 336
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```
tac ttc tgc cac ttc tgc gac tcg gac ggg gcc cag gac tac tac agc      1056
Tyr Phe Cys His Phe Cys Asp Ser Asp Gly Ala Gln Asp Tyr Tyr Ser
337                 342                 347                 352

gac tat gcc tac ctg cgt gag cac ttc cgg gag aag cac ttt ctg tgt      1104
Asp Tyr Ala Tyr Leu Arg Glu His Phe Arg Glu Lys His Phe Leu Cys
353                 358                 363                 368

gag gaa ggc cgc tgc agc acg gag cag ttc acc cac gcc ttc cgc acc      1152
Glu Glu Gly Arg Cys Ser Thr Glu Gln Phe Thr His Ala Phe Arg Thr
369                 374                 379                 384

gag atc gac ctc aag gcc cac agg acg gcc tgc cac agt cgc agc cgc      1200
Glu Ile Asp Leu Lys Ala His Arg Thr Ala Cys His Ser Arg Ser Arg
385                 390                 395                 400

gcc gag gca cgc cag aac cgc cac atc gac ctg cag ttc agc tac gcg      1248
Ala Glu Ala Arg Gln Asn Arg His Ile Asp Leu Gln Phe Ser Tyr Ala
401                 406                 411                 416

cca cgg cac tcg cgc cgg aac gag ggt gag cag gca cct ggc ctg gat      1296
Pro Arg His Ser Arg Arg Asn Glu Gly Glu Gln Ala Pro Gly Leu Asp
417                 422                 427                 432

gcc ccc agg cct gtt cct cct att gtc gtc ccg ggg tcc cgg gaa gtg      1344
Ala Pro Arg Pro Val Pro Pro Ile Val Val Pro Gly Ser Arg Glu Val
433                 438                 443                 448

acg ggc tgt ctg ctg gcc gca ggg gtc gtt ggt ggc gaa gac tac gag      1392
Thr Gly Cys Leu Leu Ala Ala Gly Val Val Gly Gly Glu Asp Tyr Glu
449                 454                 459                 464

gag gtg gac agg tac agc cgc cag ggc cga gtg gcc cgg gct ggc act      1440
Glu Val Asp Arg Tyr Ser Arg Gln Gly Arg Val Ala Arg Ala Gly Thr
465                 470                 475                 480

cgc gga gcc cag cag agc cgc cga gga agc tgg agg tac aaa agg gaa      1488
Arg Gly Ala Gln Gln Ser Arg Arg Gly Ser Trp Arg Tyr Lys Arg Glu
481                 486                 491                 496

gaa gag gac cga gaa gta gca gct gct gtc cgg gcc tcc gtg gcc gca      1536
Glu Glu Asp Arg Glu Val Ala Ala Ala Val Arg Ala Ser Val Ala Ala
497                 502                 507                 512

cag cag cag gag gag gct cgc agg agt gag gat cag gag gaa ggc ggt      1584
Gln Gln Gln Glu Glu Ala Arg Arg Ser Glu Asp Gln Glu Glu Gly Gly
513                 518                 523                 528

agg ccc aag aag gag gag gca gcg gcg cgg gga cct gag gat ccc cgt      1632
Arg Pro Lys Lys Glu Glu Ala Ala Ala Arg Gly Pro Glu Asp Pro Arg
529                 534                 539                 544

ggc ccc cgg cgc tca ccc cgg act cag ggc gaa ggc cca ggc ccc aag      1680
Gly Pro Arg Arg Ser Pro Arg Thr Gln Gly Glu Gly Pro Gly Pro Lys
545                 550                 555                 560
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gaa acc tcg aca aat ggt cct gta agc caa gaa gcc ttc tcg gtg aca      1728
Glu Thr Ser Thr Asn Gly Pro Val Ser Gln Glu Ala Phe Ser Val Thr
561                 566                 571                 576

ggc cca gcc gcc cca ggc gcc ctc cca cca ccc agc ccg aag ctc aag      1776
Gly Pro Ala Ala Pro Gly Ala Leu Pro Pro Pro Ser Pro Lys Leu Lys
577                 582                 587                 592

gac gaa gac ttc ccc agc ctc tct gcc tcc act tcc tcc tcc tgc tcc      1824
Asp Glu Asp Phe Pro Ser Leu Ser Ala Ser Thr Ser Ser Ser Cys Ser
593                 598                 603                 608

act gca gca acc ccg ggc cct gtg ggg ttg gcg ctg ccg tac gcc atc      1872
Thr Ala Ala Thr Pro Gly Pro Val Gly Leu Ala Leu Pro Tyr Ala Ile
609                 614                 619                 624

cct gcc aga ggc agg agt gcc ttc cag gag gag gac ttc ccc gcc ctg      1920
Pro Ala Arg Gly Arg Ser Ala Phe Gln Glu Glu Asp Phe Pro Ala Leu
625                 630                 635                 640

gtg tcc tcg gtg ccc aag cct ggc acc gcc ccc acc agc ctt gtc tct      1968
Val Ser Ser Val Pro Lys Pro Gly Thr Ala Pro Thr Ser Leu Val Ser
641                 646                 651                 656

gcc tgg aac agc agc agt agc agc aag aag gta gca cag ccc cca ctc      2016
Ala Trp Asn Ser Ser Ser Ser Ser Lys Lys Val Ala Gln Pro Pro Leu
657                 662                 667                 672

tcg gcg cag gct acc ggc agc ggc cag ccc acc agg aag gct ggg aag      2064
Ser Ala Gln Ala Thr Gly Ser Gly Gln Pro Thr Arg Lys Ala Gly Lys
673                 678                 683                 688

ggg agc agg ggc ggc agg aag ggc ggc ccg ccc ttc aca cag gag gag      2112
Gly Ser Arg Gly Gly Arg Lys Gly Gly Pro Pro Phe Thr Gln Glu Glu
689                 694                 699                 704

gag gag gac ggc ggc ccg gcc ctg cag gag ctt ctg agc aca cgc ccc      2160
Glu Glu Asp Gly Gly Pro Ala Leu Gln Glu Leu Leu Ser Thr Arg Pro
705                 710                 715                 720

acg ggc tcc gtc tcc tcc aca ctg ggg ctg gcc tcc atc caa ccc tct      2208
Thr Gly Ser Val Ser Ser Thr Leu Gly Leu Ala Ser Ile Gln Pro Ser
721                 726                 731                 736

aaa gtt ggg aag aag aag aaa gtg ggc tcg gag aag cca ggc acc aca      2256
Lys Val Gly Lys Lys Lys Lys Val Gly Ser Glu Lys Pro Gly Thr Thr
737                 742                 747                 752

ttg cca cag ccc ccg ccc gct acc tgt ccc cca ggg gct ttg cag gcc      2304
Leu Pro Gln Pro Pro Pro Ala Thr Cys Pro Pro Gly Ala Leu Gln Ala
753                 758                 763                 768

ccg gaa gct cct gcc agc aga gcc gag ggg cca gtt gcc gtc gtc gtt      2352
Pro Glu Ala Pro Ala Ser Arg Ala Glu Gly Pro Val Ala Val Val Val
769                 774                 779                 784

aat gga cac acg gag ggc ccg gcc cct gct cgg agt gcc ccc aag gaa      2400
```

Asn Gly His Thr Glu Gly Pro Ala Pro Ala Arg Ser Ala Pro Lys Glu
785 790 795 800

ccc cct ggg ctc cca agg ccc ctg ggg tcc ttc ccc tgc ccc acg cca 2448
Pro Pro Gly Leu Pro Arg Pro Leu Gly Ser Phe Pro Cys Pro Thr Pro
801 806 811 816

cag gag gac ttc cca gcg ctc ggc ggc ccc tgc cca ccc cgg atg ccg 2496
Gln Glu Asp Phe Pro Ala Leu Gly Gly Pro Cys Pro Pro Arg Met Pro
817 822 827 832

ccg ccc cca ggc ttc agc gct gtg gtg ctc ctg aag ggc acg cct ccc 2544
Pro Pro Pro Gly Phe Ser Ala Val Val Leu Leu Lys Gly Thr Pro Pro
833 838 843 848

cca ccc ccg ccg ggc ctg gtg ccc cca atc agc aag ccg ccc cct ggc 2592
Pro Pro Pro Pro Gly Leu Val Pro Pro Ile Ser Lys Pro Pro Pro Gly
849 854 859 864

ttc tct ggc ctt ctg cct agc ccc cac ccg gcc tgt gtc ccc agc ccc 2640
Phe Ser Gly Leu Leu Pro Ser Pro His Pro Ala Cys Val Pro Ser Pro
865 870 875 880

gcc acc acc acc acc aca aaa gca ccc agg ctg ctg cct gcc cca cgg 2688
Ala Thr Thr Thr Thr Thr Lys Ala Pro Arg Leu Leu Pro Ala Pro Arg
881 886 891 896

gcc tac cta gtc ccc gag aac ttc cgg gag agg aac ctt cag ctc atc 2736
Ala Tyr Leu Val Pro Glu Asn Phe Arg Glu Arg Asn Leu Gln Leu Ile
897 902 907 912

cag tcc atc agg gac ttc ctg cag agc gac gag gcc cgc ttc agc gag 2784
Gln Ser Ile Arg Asp Phe Leu Gln Ser Asp Glu Ala Arg Phe Ser Glu
913 918 923 928

ttc aag agc cac tca ggg gag ttc aga cag ggc ctg atc tcc gca gcc 2832
Phe Lys Ser His Ser Gly Glu Phe Arg Gln Gly Leu Ile Ser Ala Ala
929 934 939 944

cag tat tac aag agt tgc cgg gac ctg ctg ggg gag aat ttc cag aag 2880
Gln Tyr Tyr Lys Ser Cys Arg Asp Leu Leu Gly Glu Asn Phe Gln Lys
945 950 955 960

gtc ttt aat gag ctg ctg gtc ctg ctg ccc gac acg gcc aag cag cag 2928
Val Phe Asn Glu Leu Leu Val Leu Leu Pro Asp Thr Ala Lys Gln Gln
961 966 971 976

gag ctc ctg tct gca cac acg gac ttc tgc aac cgc gag aag cct ctg 2976
Glu Leu Leu Ser Ala His Thr Asp Phe Cys Asn Arg Glu Lys Pro Leu
977 982 987 992

agc acc aag tcc aag aag aac aag aag agc gcg tgg cag gcc acc acc 3024
Ser Thr Lys Ser Lys Lys Asn Lys Lys Ser Ala Trp Gln Ala Thr Thr
993 998 1003 1008

cag cag gcg ggc ctg gac tgc cgt gtg tgc ccc acc tgc cag cag gtg 3072
Gln Gln Ala Gly Leu Asp Cys Arg Val Cys Pro Thr Cys Gln Gln Val

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1009                1014                1019                1024

ctc gcg cat ggc gat gcc agc agc cac cag gcg ctg cat gct gcc cgg      3120
Leu Ala His Gly Asp Ala Ser Ser His Gln Ala Leu His Ala Ala Arg
1025                1030                1035                1040

gac gac gac ttc ccc tcc ctg caa gcc atc gcc agg atc atc acg tag      3168
Asp Asp Asp Phe Pro Ser Leu Gln Ala Ile Ala Arg Ile Ile Thr  *
1041                1046                1051                1056

ctcccgccag cgtggccaga gctgtcgcac cgtgagcgtc cttcctcctt cctctccggg    3228

ctgccaggca gccaggtaag gcctgatttg ggccctccca aagctgaggg ctgcagcccg    3288

tggggcctca gagctgaaag ctgcggcgcc actggtgcca gagtcagatg tcacagatgt    3348

gttgtgtaaa cagttggctg tttcatgctt caagaatgtt caggattaaa agcagacaag    3408

aaattgtgct acttgaagtt gaatcttttt atgagacaag ctgaatctgg gatctcaaat    3468

tgcctctgac cttttataag acagtttatc ttcaaataaa tttattttgc aataccacgc    3528

aaaaaaaaaa aaaa                                                      3542


<210> 234
<211> 677
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (293)..(571)

<400> 234
attgaaacct tgtggtaccg cctcggaatt cccgggtcga cccacgcgtc cgctcgcttc      60

ttacctcaca taattcctgc cttaaaatgt ttaaaagtag gaaaagccct ttgtttgggg     120

ctcagacttt ctggacatat gtccagctgg gccagtgatg accttaatag actctcctga     180

accttttttg gtctctccag tctttgattg tcctgtaaca tttctggggg cttatccggg     240

attggagatg gcagattttc tgtcttcttt gcctgtgggc tagagcccca gg    atg      295
                                                              Met
                                                               1

tgg gag atc tgg ggt cct tgg cac cgc tgg gag agt ttc agc ctg gaa      343
Trp Glu Ile Trp Gly Pro Trp His Arg Trp Glu Ser Phe Ser Leu Glu
  2                 7                  12                  17

gga gaa tgg ccc tcc cgc att cca gag cct tcc cct gac agc acc aaa      391
Gly Glu Trp Pro Ser Arg Ile Pro Glu Pro Ser Pro Asp Ser Thr Lys
 18                23                  28                  33
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gga acc agt gga aag ggt tgc agg aca gtc aca gga gca gtg cac aga        439
Gly Thr Ser Gly Lys Gly Cys Arg Thr Val Thr Gly Ala Val His Arg
 34                 39                  44                  49

cat ctg aac cat gtt gca ggt atc ata cct tgg gtt ctt cat agc cag        487
His Leu Asn His Val Ala Gly Ile Ile Pro Trp Val Leu His Ser Gln
 50                 55                  60                  65

ctg aaa cca aca gca gcc act gcc cag gac cag tgg acc agt caa caa        535
Leu Lys Pro Thr Ala Ala Thr Ala Gln Asp Gln Trp Thr Ser Gln Gln
 66                 71                  76                  81

tac cca gac cac cca aca cgg ctg atc cta cag tga aatc aagccactgc        585
Tyr Pro Asp His Pro Thr Arg Leu Ile Leu Gln  *
 82                 87                  92

tgacaagaac aactgaacaa ctgccctgct ccaaccacac cagaggctgg gtcagtccac     645

gcatggctga agcttaagga aacatcgagc cc                                    677



     <210> 235
     <211> 1789
     <212> DNA
     <213> Homo sapiens

     <220>
     <221> CDS
     <222> (706)..(966)

     <400> 235
ttggggtgtc acccaccatt gaaaatgagt ttttttttta acctgtaaaa ctaggctgat      60

tttgaattcc agggctagtc ctgagaatta agtgagagaa tacatgtaaa gtcgtgtaac     120

tggagaagtt atatgcactt gctgggtatg actacaggac tggcatttac ggattgttta     180

tagaggtctg ggcattgggt tatggtttgg gatttgactg tcacttgaca gccacggccg     240

ctgtgaatga cagaaatgag gttcttgacc cttccttacc ggtcagctgt atgcagtgtg     300

gtggtattgt cctagatgtt ttgcataaca gacctgtcat catacagatg aggaaactga     360

ggctcagaaa ggctaagccg cttaaccaga agtcacatag ctactaagac caagttaggt     420

tttgaatcta gacttctgac tcctaagctc accagatctt aacctacttg gaacccactg     480

cttggtagtg aattataata aaatattaac tgtgtttcta accaaatcag tgcttgagat     540

ttaaaaattc atacacacgc ctcaaaccta cagattctga aacgacttct ttgggattaa     600

agaagtgtat gtttctagaa gactgcggaa aacatcattt ctttggctgt gactttcttg     660

gagcaggcag tggtgagcaa ggagtgtgtc cccgtggacc agttc    atg gag cac      714
                                                    Met Glu His
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                                                              1

ctg ctt ccc agc ctc ctg agc ctc gca tca gat cct gtg ccc aac gtg      762
Leu Leu Pro Ser Leu Leu Ser Leu Ala Ser Asp Pro Val Pro Asn Val
  4                   9                  14                  19

agg gtt ctg cta gcc aag gcc cta agg cag atg ctg ttg gaa aag gcg      810
Arg Val Leu Leu Ala Lys Ala Leu Arg Gln Met Leu Leu Glu Lys Ala
 20                  25                  30                  35

tat ttt aga aat gct ggt aac cct cat ctt gaa gtc att gaa gag acc      858
Tyr Phe Arg Asn Ala Gly Asn Pro His Leu Glu Val Ile Glu Glu Thr
 36                  41                  46                  51

atc tta gca ttg cag tca gac cgg gac caa gat gtt tcc ttt ttt gca      906
Ile Leu Ala Leu Gln Ser Asp Arg Asp Gln Asp Val Ser Phe Phe Ala
 52                  57                  62                  67

gcc cta gaa cca aag cgg cgg aat atc ata gac act gct gta cta gaa      954
Ala Leu Glu Pro Lys Arg Arg Asn Ile Ile Asp Thr Ala Val Leu Glu
 68                  73                  78                  83

aaa cag aat taa cta cttccgtgat gagttgcaat ctgattattt catgcttggc     1009
Lys Gln Asn  *
 84

acatatggct taccataact tgaaggggaa ctgattgtat tataccagct gggggagatt   1069

ttggaacctt tcatactatg cactcagtga ttgacgcctt ttccatctgt accccgaagg   1129

gactgaacct gatgggggct ttttctggat ggctgggcca tcctgatcaa gcctgatcag   1189

taagtctgtg gaaagattgc agaccaggtg gctaactggg cactggagcc tctgaaccat   1249

caggctgtct gccagcaagt tcttttctcc atggcagact gtatgatctg aagtcccccc   1309

aaccctctcc aagtaaagta gtttattaga agctcttaag tctttaatag acctgcatat   1369

ttccttccct tatgatttcc tataaaatat agtttatggt gttatatttt taactgaaat   1429

actgtacata tgtaaataac tcttgacagg aagaaaatat attaatgtag tatttgcccc   1489

ctatcagtga gctgaacaaa tacatcattt aaatctatgc tgcactttga gttgctacaa   1549

atatggttcg atttgtttat ttttgaaaaa tgtgataaag aaatctaaag aatgattgat   1609

ggcagtcttt ctaatattgt gcctttgtta taaactactt ggaacttttc ctcaggcact   1669

cactcctccc tgcctgacag gaactgtttc catgaagata tgtgttggcc tttgatagag   1729

gcataaagct gaaagatttt tcatttttat atggatatgc tgtcatatgt ttaagaactg   1789


        <210> 236
        <211> 1935
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<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (175)..(1872)

<400> 236
ccgaggctat aagagggcgc acaagtggcg cggcgcagga gccgccgcca gtggagggcc      60

gggcgctgcg gccgcggccg gggcgggcgc agggccgagc ggacgggggg gcgcgggccc     120

cccgggaggc cgcggccact ccccccgggg ccggcgcggc gggggaggcg gagg atg       177
                                                            Met
                                                            1

gaa aca ccc ttc tac ggc gat gag gcg ctg agc ggc ctg ggc ggc ggc       225
Glu Thr Pro Phe Tyr Gly Asp Glu Ala Leu Ser Gly Leu Gly Gly Gly
2               7                   12                  17

gcc agt ggc agc ggc ggc agc ttc gcg tcc ccg ggc cgc ttg ttc ccc       273
Ala Ser Gly Ser Gly Gly Ser Phe Ala Ser Pro Gly Arg Leu Phe Pro
18              23                  28                  33

ggg gcg ccc ccg acg gcc gcg gcc ggc agc atg atg aag aag gac gcg       321
Gly Ala Pro Pro Thr Ala Ala Ala Gly Ser Met Met Lys Lys Asp Ala
34              39                  44                  49

ctg acg ctg agc ctg agt gag cag gtg gcg gca gcg ctc aag cct gcg       369
Leu Thr Leu Ser Leu Ser Glu Gln Val Ala Ala Ala Leu Lys Pro Ala
50              55                  60                  65

gcc gcg ccc gcc tcc tac ccc cct gcg cgc cga cgg cgc ccc cag cgc       417
Ala Ala Pro Ala Ser Tyr Pro Pro Ala Arg Arg Arg Arg Pro Gln Arg
66              71                  76                  81

ggc acc ccc cga cgg cct gct cgc ctc tcc cga cct ggg gct gct gaa       465
Gly Thr Pro Arg Arg Pro Ala Arg Leu Ser Arg Pro Gly Ala Ala Glu
82              87                  92                  97

gct ggc ctc ccc cga gct cga gcg cct cat cat cca gtc caa cgg gct       513
Ala Gly Leu Pro Arg Ala Arg Ala Pro His His Pro Val Gln Arg Ala
98              103                 108                 113

ggt cac cac cac gcc gac gag ctc aca gtt cct cta ccc caa ggt ggc       561
Gly His His His Ala Asp Glu Leu Thr Val Pro Leu Pro Gln Gly Gly
114             119                 124                 129

ggc cag cga gga gca gga gtt cgc cga ggg ctt cgt caa ggc cct gga       609
Gly Gln Arg Gly Ala Gly Val Arg Arg Gly Leu Arg Gln Gly Pro Gly
130             135                 140                 145

gga ttt aca caa gca gaa cca gct cgg cgc ggg cgc ggc cgc tgc cgc       657
Gly Phe Thr Gln Ala Glu Pro Ala Arg Arg Gly Arg Gly Arg Cys Arg
146             151                 156                 161

cgc cgc cgc cgc cgc cgg ggg gcc ctc ggg cac ggc cac ggg ctc cgc       705
```

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Arg Arg Arg Arg Arg Arg Gly Ala Leu Gly His Gly His Gly Leu Arg
162                 167                 172                 177

gcc ccc cgg cga gct ggc ccc ggc ggc ggc cgc gcc cga agc gcc tgt        753
Ala Pro Arg Arg Ala Gly Pro Gly Gly Gly Arg Ala Arg Ser Ala Cys
178                 183                 188                 193

cta cgc gaa cct gag cag cta cgc ggg cgg cgc cgg ggg cgc ggg ggg        801
Leu Arg Glu Pro Glu Gln Leu Arg Gly Arg Arg Arg Gly Arg Gly Gly
194                 199                 204                 209

cgc cgc gac ggt cgc ctt cgc tgc cga acc tgt gcc ctt ccc gcc gcc        849
Arg Arg Asp Gly Arg Leu Arg Cys Arg Thr Cys Ala Leu Pro Ala Ala
210                 215                 220                 225

gcc acc ccc agg cgc gtt ggg gcc gcc gcg cct ggc tgc gct caa gga        897
Ala Thr Pro Arg Arg Val Gly Ala Ala Ala Pro Gly Cys Ala Gln Gly
226                 231                 236                 241

cga gcc aca gac ggt gcc cga cgt gcc gag ctt cgg cga gag ccc gcc        945
Arg Ala Thr Asp Gly Ala Arg Arg Ala Glu Leu Arg Arg Glu Pro Ala
242                 247                 252                 257

gtt gtc gcc cat cga cat gga cac gca gga gcg cat caa ggc gga gcg        993
Val Val Ala His Arg His Gly His Ala Gly Ala His Gln Gly Gly Ala
258                 263                 268                 273

caa gcg gct gcg caa ccg cat cgc cgc ctc caa gtg ccg caa gcg caa       1041
Gln Ala Ala Ala Gln Pro His Arg Arg Leu Gln Val Pro Gln Ala Gln
274                 279                 284                 289

gct gga gcg cat ctc gcg cct gga aga gaa agt gaa gac cct caa gag       1089
Ala Gly Ala His Leu Ala Pro Gly Arg Glu Ser Glu Asp Pro Gln Glu
290                 295                 300                 305

tca gaa cac gga gct ggc gtc cac ggc gag cct gct gcg cga gca ggt       1137
Ser Glu His Gly Ala Gly Val His Gly Glu Pro Ala Ala Arg Ala Gly
306                 311                 316                 321

ggc gca gct caa gca gaa agt cct cag cca cgt caa cag cgg ctg cca       1185
Gly Ala Ala Gln Ala Glu Ser Pro Gln Pro Arg Gln Gln Arg Leu Pro
322                 327                 332                 337

gct gct gcc cca gca cca ggt gcc cgc gta ctg agt ccg cgc gcg ggg       1233
Ala Ala Ala Pro Ala Pro Gly Ala Arg Val Leu Ser Pro Arg Ala Gly
338                 343                 348                 353

cgc atg cgc ggc cac cct ccc caa ggg gcg ggc tcg cgg ggg ggt gtc       1281
Arg Met Arg Gly His Pro Pro Gln Gly Ala Gly Ser Arg Gly Gly Val
354                 359                 364                 369

gtg ggc gcc ccg gac ttg gag agg gtg cgg ccc tgg gga ccc ccc cct       1329
Val Gly Ala Pro Asp Leu Glu Arg Val Arg Pro Trp Gly Pro Pro Pro
370                 375                 380                 385

ccc cga gtg tgc cca gga act cag aga ggg cgc ggc ccc cgg gga ttc       1377
Pro Arg Val Cys Pro Gly Thr Gln Arg Gly Arg Gly Pro Arg Gly Phe
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```
386                 391                 396                 401

ccc ccc gag ggt gcc cag gac tcg gaa ggg gcg ccc cgg act cga caa      1425
Pro Pro Glu Gly Ala Gln Asp Ser Glu Gly Ala Pro Arg Thr Arg Gln
402                 407                 412                 417

gct gga ccc cct gct ccc ggg ggg ggc gag cgc atg acc ccc ccg ccc      1473
Ala Gly Pro Pro Ala Pro Gly Gly Gly Glu Arg Met Thr Pro Pro Pro
418                 423                 428                 433

tcg cgc tgc ctc ttt ccc ccg cgc ggc cgc ccc gtg ttg cac aaa ccc      1521
Ser Arg Cys Leu Phe Pro Pro Arg Gly Arg Pro Val Leu His Lys Pro
434                 439                 444                 449

gcg cgt ctc ggc tgc ccc ttt gta cac cgc gcc gcg gaa ggg ggc tcc      1569
Ala Arg Leu Gly Cys Pro Phe Val His Arg Ala Ala Glu Gly Gly Ser
450                 455                 460                 465

gag ggg gcg cag cct caa acc ctg cct ttc ctt tac ttt tac ttt ttt      1617
Glu Gly Ala Gln Pro Gln Thr Leu Pro Phe Leu Tyr Phe Tyr Phe Phe
466                 471                 476                 481

ttt ttt ttt ctt tgg aag aga gaa gaa cag agt gtt cga ttc tgc cct      1665
Phe Phe Phe Leu Trp Lys Arg Glu Glu Gln Ser Val Arg Phe Cys Pro
482                 487                 492                 497

att tat gtt tct act cgg gaa caa acg ttg gtt gtg tgt gtg tgt gtt      1713
Ile Tyr Val Ser Thr Arg Glu Gln Thr Leu Val Val Cys Val Cys Val
498                 503                 508                 513

ttc ttg tgt tgg ttt ttt aaa gaa atg gga aga aga aaa aaa aat tct      1761
Phe Leu Cys Trp Phe Phe Lys Glu Met Gly Arg Arg Lys Lys Asn Ser
514                 519                 524                 529

ccg ccc ctt tcc tcg atc tcg ctc ccc cct tcg gtt ctt tcg acc ggt      1809
Pro Pro Leu Ser Ser Ile Ser Leu Pro Pro Ser Val Leu Ser Thr Gly
530                 535                 540                 545

ccc ccc tcc ctt ttt tgt tct gtt ttg ttt tgt ttt gct acg agt cca      1857
Pro Pro Ser Leu Phe Cys Ser Val Leu Phe Cys Phe Ala Thr Ser Pro
546                 551                 556                 561

cat tcc tgt ttg taa tccttggttc gcccggtttt ctgttttcag taaagtctcg     1912
His Ser Cys Leu  *
562

ttacgccaaa aaaaaaaaaa aaa                                            1935


      <210> 237
      <211> 6098
      <212> DNA
      <213> Homo sapiens

      <220>
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<221> CDS
<222> (58)..(4251)

<400> 237
acgtcagtgc aggggggactc ccagggcacc cccacctcca gccagggcag catcaat        57
atg gag cac tgg atc agc cag gcc atc cac ggc tcc acc acg tcc acc       105
Met Glu His Trp Ile Ser Gln Ala Ile His Gly Ser Thr Thr Ser Thr
 1               5                  10                  15

acc tcc tcg tcc tct acg cag agc ggg ggc agc ggg gct gcc cac agg       153
Thr Ser Ser Ser Ser Thr Gln Ser Gly Gly Ser Gly Ala Ala His Arg
 17                 22                  27                  32

ctg gcg gat gtc atg gct cag acc cac ata gaa aat cat tct gca cct       201
Leu Ala Asp Val Met Ala Gln Thr His Ile Glu Asn His Ser Ala Pro
 33                 38                  43                  48

cct gac gta acc acg tac acc tca gag cac tcg ata cag gtg gag aga       249
Pro Asp Val Thr Thr Tyr Thr Ser Glu His Ser Ile Gln Val Glu Arg
 49                 54                  59                  64

ccg cag ggt tcc acg ggg tcc cgg aca gcg ccc aag tac ggc aac gcc       297
Pro Gln Gly Ser Thr Gly Ser Arg Thr Ala Pro Lys Tyr Gly Asn Ala
 65                 70                  75                  80

gag ctc atg gag acc ggg gat gga gta cca gta agt agc cgg gtg tca       345
Glu Leu Met Glu Thr Gly Asp Gly Val Pro Val Ser Ser Arg Val Ser
 81                 86                  91                  96

gca aaa atc cag cag ctt gtc aat acc ctc aaa cga ccg aaa cga cca       393
Ala Lys Ile Gln Gln Leu Val Asn Thr Leu Lys Arg Pro Lys Arg Pro
 97                 102                 107                 112

cct tta cga gaa ttc ttt gtc gat gac ttt gaa gaa tta tta gaa gtt       441
Pro Leu Arg Glu Phe Phe Val Asp Asp Phe Glu Glu Leu Leu Glu Val
113                 118                 123                 128

caa caa ccg gat ccg aac caa cca aag ccg gag ggg gcc cag atg ctg       489
Gln Gln Pro Asp Pro Asn Gln Pro Lys Pro Glu Gly Ala Gln Met Leu
129                 134                 139                 144

gcc atg cgc gga gag cag ctg ggc gtg gtc acg aac tgg ccg ccg tcg       537
Ala Met Arg Gly Glu Gln Leu Gly Val Val Thr Asn Trp Pro Pro Ser
145                 150                 155                 160

ctg gag gcc gca ctg cag agg tgg ggc acc atc tcg ccc aag gcg ccc       585
Leu Glu Ala Ala Leu Gln Arg Trp Gly Thr Ile Ser Pro Lys Ala Pro
161                 166                 171                 176

tgc ctg acc acc atg gac acc aac ggg aag ccc ctc tac atc ctc act       633
Cys Leu Thr Thr Met Asp Thr Asn Gly Lys Pro Leu Tyr Ile Leu Thr
177                 182                 187                 192

tac ggc aag ctg tgg aca aga agt atg aag gtc gct tac agc att cta       681
Tyr Gly Lys Leu Trp Thr Arg Ser Met Lys Val Ala Tyr Ser Ile Leu
193                 198                 203                 208
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cac aaa tta ggc aca aag cag gaa ccc atg gtc cgg cct gga gat agg      729
His Lys Leu Gly Thr Lys Gln Glu Pro Met Val Arg Pro Gly Asp Arg
209                 214                 219                 224

gtg gca ctg gtg ttc ccc aac aat gat ccg gct gcc ttc atg gcg gct      777
Val Ala Leu Val Phe Pro Asn Asn Asp Pro Ala Ala Phe Met Ala Ala
225                 230                 235                 240

ttc tac ggc tgc ctg ctg gcc gag gtg gtc ccc gtg ccc atc gag gtg      825
Phe Tyr Gly Cys Leu Leu Ala Glu Val Val Pro Val Pro Ile Glu Val
241                 246                 251                 256

cca ctc acc agg aag gac gca ggg agc cag cag ata ggt ttc ttg ctt      873
Pro Leu Thr Arg Lys Asp Ala Gly Ser Gln Gln Ile Gly Phe Leu Leu
257                 262                 267                 272

gga agc tgt gga gtt act gta gcc ttg act agt gac gcc tgc cat aaa      921
Gly Ser Cys Gly Val Thr Val Ala Leu Thr Ser Asp Ala Cys His Lys
273                 278                 283                 288

gga ctt cca aaa agc cca acg gga gag atc cca cag ttt aaa ggt tgg      969
Gly Leu Pro Lys Ser Pro Thr Gly Glu Ile Pro Gln Phe Lys Gly Trp
289                 294                 299                 304

cca aag ctg ctg tgg ttt gtc aca gag tct aaa cat ctc tcc aaa ccg     1017
Pro Lys Leu Leu Trp Phe Val Thr Glu Ser Lys His Leu Ser Lys Pro
305                 310                 315                 320

ccc cga gac tgg ttc cca cac att aaa gat gcc aat aac gac act gcg     1065
Pro Arg Asp Trp Phe Pro His Ile Lys Asp Ala Asn Asn Asp Thr Ala
321                 326                 331                 336

tat att gag tac aag acg tgt aag gat ggc agt gtg ctg ggt gtg acg     1113
Tyr Ile Glu Tyr Lys Thr Cys Lys Asp Gly Ser Val Leu Gly Val Thr
337                 342                 347                 352

gta acg agg act gcg ctg ctg aca cac tgc cag gcc ctg acg cag gcg     1161
Val Thr Arg Thr Ala Leu Leu Thr His Cys Gln Ala Leu Thr Gln Ala
353                 358                 363                 368

tgt ggc tac acg gaa gct gaa acc att gtg aat gtg ctg gat ttc aag     1209
Cys Gly Tyr Thr Glu Ala Glu Thr Ile Val Asn Val Leu Asp Phe Lys
369                 374                 379                 384

aag gac gtc ggg ctc tgg cat ggc atc ctg aca agc gtc atg aac atg     1257
Lys Asp Val Gly Leu Trp His Gly Ile Leu Thr Ser Val Met Asn Met
385                 390                 395                 400

atg cat gtg atc agc atc ccg tac tcg ctg atg aag gtg aac cct ctc     1305
Met His Val Ile Ser Ile Pro Tyr Ser Leu Met Lys Val Asn Pro Leu
401                 406                 411                 416

tcc tgg atc cag aag gtc tgc cag tac aaa gca aaa gtg gcg tgt gtg     1353
Ser Trp Ile Gln Lys Val Cys Gln Tyr Lys Ala Lys Val Ala Cys Val
417                 422                 427                 432

aaa tcg agg gat atg cat tgg gca tta gta gca cac aga gat cag aga     1401
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Lys Ser Arg Asp Met His Trp Ala Leu Val Ala His Arg Asp Gln Arg
433                 438                 443                 448

gac atc aac ctc tcc tct ctg cga atg ctg ata gtg gcg gac ggc gcg      1449
Asp Ile Asn Leu Ser Ser Leu Arg Met Leu Ile Val Ala Asp Gly Ala
449                 454                 459                 464

aac ccc tgg tct att tct tct tgc gat gca ttt ctc aat gtc ttc caa      1497
Asn Pro Trp Ser Ile Ser Ser Cys Asp Ala Phe Leu Asn Val Phe Gln
465                 470                 475                 480

agt aaa ggc ctt cga cag gag gtc atc tgt cct tgt gcc agc tcg cca      1545
Ser Lys Gly Leu Arg Gln Glu Val Ile Cys Pro Cys Ala Ser Ser Pro
481                 486                 491                 496

gag gcc ctc act gtg gcc atc cgg agg ccc acg gat gac agt aac cag      1593
Glu Ala Leu Thr Val Ala Ile Arg Arg Pro Thr Asp Asp Ser Asn Gln
497                 502                 507                 512

ccc ccg ggc cgg ggt gtc ctc tcc atg cat gga ctg acc tat ggg gtc      1641
Pro Pro Gly Arg Gly Val Leu Ser Met His Gly Leu Thr Tyr Gly Val
513                 518                 523                 528

att cgt gtg gac tcg gaa gag aag ctg tcc gtg ctc acc gtg cag gat      1689
Ile Arg Val Asp Ser Glu Glu Lys Leu Ser Val Leu Thr Val Gln Asp
529                 534                 539                 544

gtc ggc ctc gtg atg cct gga gcc atc atg tgt tca gtg aag cca gac      1737
Val Gly Leu Val Met Pro Gly Ala Ile Met Cys Ser Val Lys Pro Asp
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ggg gtt cct cag ctg tgc aga acg gat gag atc ggg gag ctg tgt gtg      1785
Gly Val Pro Gln Leu Cys Arg Thr Asp Glu Ile Gly Glu Leu Cys Val
561                 566                 571                 576

tgt gca gtt gcg acg ggc acg tcc tac tat ggc ctc tct ggc atg acc      1833
Cys Ala Val Ala Thr Gly Thr Ser Tyr Tyr Gly Leu Ser Gly Met Thr
577                 582                 587                 592

aag aac acc ttt gag gtg ttt ccc atg aca agc tcc ggg gct ccg atc      1881
Lys Asn Thr Phe Glu Val Phe Pro Met Thr Ser Ser Gly Ala Pro Ile
593                 598                 603                 608

agt gaa tac cca ttc ata agg aca ggc ttg ctg ggg ttc gtg ggt ccc      1929
Ser Glu Tyr Pro Phe Ile Arg Thr Gly Leu Leu Gly Phe Val Gly Pro
609                 614                 619                 624

gga ggc ctc gtc ttc gtg gtg ggc aag atg gat ggc ctc atg gtg gtc      1977
Gly Gly Leu Val Phe Val Val Gly Lys Met Asp Gly Leu Met Val Val
625                 630                 635                 640

agc ggg cgc agg cac aac gcc gac gac atc gtg gcc act gcg ctg gcc      2025
Ser Gly Arg Arg His Asn Ala Asp Asp Ile Val Ala Thr Ala Leu Ala
641                 646                 651                 656

gta gaa ccc atg aag ttt gtc tac cgg gga agg ata gcc gtg ttc tcg      2073
Val Glu Pro Met Lys Phe Val Tyr Arg Gly Arg Ile Ala Val Phe Ser
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gtg acc gtg ctg cac gac gag agg atc gtg atc gtg gct gag cag agg        2121
Val Thr Val Leu His Asp Glu Arg Ile Val Ile Val Ala Glu Gln Arg
673                 678                 683                 688

cct gac tcc acg gaa gag gac agt ttc cag tgg atg agc cgt gtg ctg        2169
Pro Asp Ser Thr Glu Glu Asp Ser Phe Gln Trp Met Ser Arg Val Leu
689                 694                 699                 704

cag gcg att gac agt ata cat caa gtt gga gtt tat tgc ctg gcc ttg        2217
Gln Ala Ile Asp Ser Ile His Gln Val Gly Val Tyr Cys Leu Ala Leu
705                 710                 715                 720

gtg cca gca aac acc ctc ccc aaa acc ccg ctt ggt ggg atc cat tta        2265
Val Pro Ala Asn Thr Leu Pro Lys Thr Pro Leu Gly Gly Ile His Leu
721                 726                 731                 736

tca gaa aca aaa cag ctt ttt ctg gag ggc tct ctg cac ccc tgc aat        2313
Ser Glu Thr Lys Gln Leu Phe Leu Glu Gly Ser Leu His Pro Cys Asn
737                 742                 747                 752

gtc cta atg tgc ccc cac acc tgc gtc aca aac ttg cct aag cct cga        2361
Val Leu Met Cys Pro His Thr Cys Val Thr Asn Leu Pro Lys Pro Arg
753                 758                 763                 768

cag aag cag cca gaa atc ggc cct gcc tct gtg atg gtg ggg aac ctg        2409
Gln Lys Gln Pro Glu Ile Gly Pro Ala Ser Val Met Val Gly Asn Leu
769                 774                 779                 784

gtc tct ggg aag aga atc gcc cag gcc agt ggc aga gac ctg ggt cag        2457
Val Ser Gly Lys Arg Ile Ala Gln Ala Ser Gly Arg Asp Leu Gly Gln
785                 790                 795                 800

atc gaa gat aac gac cag gca cgc aag ttc ctg ttc ctc tca gag gtc        2505
Ile Glu Asp Asn Asp Gln Ala Arg Lys Phe Leu Phe Leu Ser Glu Val
801                 806                 811                 816

ttg cag tgg aga gca cag acc acc ccg gac cac atc ctc tac acg ctg        2553
Leu Gln Trp Arg Ala Gln Thr Thr Pro Asp His Ile Leu Tyr Thr Leu
817                 822                 827                 832

ctc aac tgt cgg ggt gcg ata gcg aac tcg ctg acc tgc gtg cag ctg        2601
Leu Asn Cys Arg Gly Ala Ile Ala Asn Ser Leu Thr Cys Val Gln Leu
833                 838                 843                 848

cac aag aga gct gag aag atc gcc gtg atg ctg atg gag agg ggc cac        2649
His Lys Arg Ala Glu Lys Ile Ala Val Met Leu Met Glu Arg Gly His
849                 854                 859                 864

ctt cag gac ggc gac cac gtg gcc ttg gtc tac ccc cca gga ata gac        2697
Leu Gln Asp Gly Asp His Val Ala Leu Val Tyr Pro Pro Gly Ile Asp
865                 870                 875                 880

ctg ata gca gcg ttt tat ggt tgc ctg tac gca ggc tgt gtg cca ata        2745
Leu Ile Ala Ala Phe Tyr Gly Cys Leu Tyr Ala Gly Cys Val Pro Ile
881                 886                 891                 896
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acc gtc cgt ccc ccg cac cca cag aac atc gcg acg acg ttg cct acc      2793
Thr Val Arg Pro Pro His Pro Gln Asn Ile Ala Thr Thr Leu Pro Thr
897                 902                 907                 912

gtc aag atg att gtg gag gtg agt cgc tct gcc tgt ctg atg acg aca      2841
Val Lys Met Ile Val Glu Val Ser Arg Ser Ala Cys Leu Met Thr Thr
913                 918                 923                 928

cag ctg atc tgt aag ttg ctg cgg tcc agg gag gcg gcg gcg gct gtg      2889
Gln Leu Ile Cys Lys Leu Leu Arg Ser Arg Glu Ala Ala Ala Ala Val
929                 934                 939                 944

gac gtc agg acg tgg ccc ctc atc ctg gac aca gat gat ttg cca aag      2937
Asp Val Arg Thr Trp Pro Leu Ile Leu Asp Thr Asp Asp Leu Pro Lys
945                 950                 955                 960

aag cgg cct gcc cag atc tgc aaa cct tgc aac cca gac act ctt gca      2985
Lys Arg Pro Ala Gln Ile Cys Lys Pro Cys Asn Pro Asp Thr Leu Ala
961                 966                 971                 976

tat ctc gac ttc agc gtg tcc aca act ggg atg cta gct ggc gta aag      3033
Tyr Leu Asp Phe Ser Val Ser Thr Thr Gly Met Leu Ala Gly Val Lys
977                 982                 987                 992

atg tct cac gca gcc acc agt gcc ttc tgc cgt tcc att aag ctg cag      3081
Met Ser His Ala Ala Thr Ser Ala Phe Cys Arg Ser Ile Lys Leu Gln
993                 998                1003                1008

tgt gaa ctt tac ccc tct aga gaa gtg gcc atc tgc ctg gac cct tac      3129
Cys Glu Leu Tyr Pro Ser Arg Glu Val Ala Ile Cys Leu Asp Pro Tyr
1009               1014                1019                1024

tgt gga ctg gga ttt gtc ctc tgg tgc ctc tgc agt gtg tat tct ggg      3177
Cys Gly Leu Gly Phe Val Leu Trp Cys Leu Cys Ser Val Tyr Ser Gly
1025               1030                1035                1040

cac cag tcc atc ctg atc ccg ccc tct gag ctg gaa acc aac ccc gcc      3225
His Gln Ser Ile Leu Ile Pro Pro Ser Glu Leu Glu Thr Asn Pro Ala
1041               1046                1051                1056

ttg tgg ctt ctt gcc gtg agt cag tac aaa gtc cga gac acg ttt tgc      3273
Leu Trp Leu Leu Ala Val Ser Gln Tyr Lys Val Arg Asp Thr Phe Cys
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tcc tac tcc gtg atg gag ctg tgc acc aag ggg ctg ggc tcg caa aca      3321
Ser Tyr Ser Val Met Glu Leu Cys Thr Lys Gly Leu Gly Ser Gln Thr
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gag tcc ctc aag gcg cga ggg ctg gac ttg tcc cga gtg agg acc tgc      3369
Glu Ser Leu Lys Ala Arg Gly Leu Asp Leu Ser Arg Val Arg Thr Cys
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Val Val Val Ala Glu Glu Arg Pro Arg Ile Ala Leu Thr Gln Ser Phe
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Ser Lys Leu Phe Lys Asp Leu Gly Leu His Pro Arg Ala Val Ser Thr
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tcg ttc ggt tgc agg gtg aac ctg gcg att tgc ttg cag gga acc tca      3513
Ser Phe Gly Cys Arg Val Asn Leu Ala Ile Cys Leu Gln Gly Thr Ser
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gga cct gac cca acc act gtc tac gtg gac atg aga gcc ctg aga cac      3561
Gly Pro Asp Pro Thr Thr Val Tyr Val Asp Met Arg Ala Leu Arg His
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gac aga gtc cgc tta gtg gaa aga gga tcc cct cat agt ctg ccc ctg      3609
Asp Arg Val Arg Leu Val Glu Arg Gly Ser Pro His Ser Leu Pro Leu
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atg gaa tcg gga aag ata ctt cca ggg gtt cgg att ata att gcc aac      3657
Met Glu Ser Gly Lys Ile Leu Pro Gly Val Arg Ile Ile Ile Ala Asn
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cca gaa aca aaa gga ccg ctg ggg gac tca cac ctt gga gag att tgg      3705
Pro Glu Thr Lys Gly Pro Leu Gly Asp Ser His Leu Gly Glu Ile Trp
1201                1206                1211                1216

gtt cac agt gcc cac aat gcc agc ggt tat ttc act att tac gga gac      3753
Val His Ser Ala His Asn Ala Ser Gly Tyr Phe Thr Ile Tyr Gly Asp
1217                1222                1227                1232

gaa tcc ctc cag tca gat cac ttc aac tca aga cta agt ttt gga gac      3801
Glu Ser Leu Gln Ser Asp His Phe Asn Ser Arg Leu Ser Phe Gly Asp
1233                1238                1243                1248

acc cag acc atc tgg gca cgc aca ggc tac ttg ggg ttc ctg cgg aga      3849
Thr Gln Thr Ile Trp Ala Arg Thr Gly Tyr Leu Gly Phe Leu Arg Arg
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act gag ctc aca gat gca aat gga gag cgc cat gat gcc ctc tac gtg      3897
Thr Glu Leu Thr Asp Ala Asn Gly Glu Arg His Asp Ala Leu Tyr Val
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gta ggg gca ctg gac gaa gcc atg gag ctg cgg ggc atg cgg tac cac      3945
Val Gly Ala Leu Asp Glu Ala Met Glu Leu Arg Gly Met Arg Tyr His
1281                1286                1291                1296

cca atc gac att gag acc tcg gtc atc aga gcc cat aaa agc gtt acg      3993
Pro Ile Asp Ile Glu Thr Ser Val Ile Arg Ala His Lys Ser Val Thr
1297                1302                1307                1312

gaa tgt gct gtg ttt acc tgg aca aat ttg ttg gtg gtt gtg gtt gag      4041
Glu Cys Ala Val Phe Thr Trp Thr Asn Leu Leu Val Val Val Val Glu
1313                1318                1323                1328

ctg gat ggg tcg gaa caa gaa gcc ttg gac ctg gtt ccc ttg gtg acc      4089
Leu Asp Gly Ser Glu Gln Glu Ala Leu Asp Leu Val Pro Leu Val Thr
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Asn Val Val Leu Glu Glu His Tyr Leu Ile Val Gly Val Val Val Val
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Val Asp Ile Gly Val Ile Pro Ile Asn Ser Arg Gly Glu Lys Gln Arg
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Met His Leu Arg Asp Gly Phe Leu Ala Asp Gln Leu Asp Pro Ile Tyr
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Val Pro Arg Arg Pro Pro Ala His Ile Ser Ser Val Arg Gln Ala Ser
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Arg Val Gln Glu Pro Ala Val His Ile Pro Gly Gln Glu Pro Leu Thr
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gcg tcc atg ctg gct gcg gcg ccc ctg cat gag caa aag cag atg att      1603
Ala Ser Met Leu Ala Ala Ala Pro Leu His Glu Gln Lys Gln Met Ile
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Gly Glu Arg Leu Tyr Pro Leu Ile His Asp Val His Thr Gln Leu Ala
103                 108                 113                 118

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Leu Met Leu Glu Ser Pro Glu Ser Leu His Ala Lys Ile Asp Glu Ala
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Val Ala Val Leu Gln Ala His Gln Ala Met Glu Gln Pro Lys Ala Tyr
151                 156                 161                 166

atg cac tga aaccaga aaaggaaatc ctcgcttcca tggctgccaa aaggacagtg      1851
Met His  *
167

tttctggctc tcagccctaa ggccctgcaa actctaactt atttcccaat tagtctgtat   1911

ctatacttgg gctctgtatg tgaatgaagg ttggtcaccc atccagccta ttacctttg     1971

ctttgtgtat taaaagtgct gcaaaaaaaa aaaaaa                             2007



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      <212> DNA
      <213> Homo sapiens

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tcgattacgc caagcttggc acgagggggc taatgaagcc tagaccccag ctggattgga     60

agcaaaggcc tttccttcac tgggaaaggt gctgctgcta cccatctcat tattctaaga    120

gtgattgaga atagaggggc tgaagggaaa cgaaagtagg agaatgttgg ccagagctag    180

tagagaaaga acgtaatatt gagaaagcag acatcagtgc taggtgaggt gctttcttta    240

aagagctgtg tgtatagact ggggaggagt ctgtctgggg acaggaatgc tgattccttt    300

ttttccctgg gcagaatcct aatgtacctg gctagctggt ggtgagtagg ggctttgggg    360

ccaacttggt gggctcccca aggaaacccc tttgaaacca atg gat gca ttc acg     415
                                           Met Asp Ala Phe Thr
                                            1

ggc tcg ggt ctc aag agg aag ttt gat gat gtg gat gtg ggc tca tca      463
Gly Ser Gly Leu Lys Arg Lys Phe Asp Asp Val Asp Val Gly Ser Ser
  6                 11                  16                  21

gtt tcc aac tca gat gat gag atc tcc agc agt gat agt gct gac agc      511
Val Ser Asn Ser Asp Asp Glu Ile Ser Ser Ser Asp Ser Ala Asp Ser
 22                 27                  32                  37

tgc gac agc ctc aat cct cct acc act gcc agc ttc aca ccc aca tcc      559
Cys Asp Ser Leu Asn Pro Pro Thr Thr Ala Ser Phe Thr Pro Thr Ser
 38                 43                  48                  53

atc ctg aag cgg cag aag cag ctg cgg agg aag aat gta cgc ttt gac      607
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10034240.010402

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Ile Leu Lys Arg Gln Lys Gln Leu Arg Arg Lys Asn Val Arg Phe Asp
 54                 59                  64                  69

cag gtg act gta tac tac ttt gcc cgg cgc caa ggt ttt acc agt gtg      655
Gln Val Thr Val Tyr Tyr Phe Ala Arg Arg Gln Gly Phe Thr Ser Val
 70                 75                  80                  85

ccc agc cag ggt ggt agc tct ctg ggc atg gcc cag cgc cat aac tct      703
Pro Ser Gln Gly Gly Ser Ser Leu Gly Met Ala Gln Arg His Asn Ser
 86                 91                  96                 101

gta cgg agc tat aca ctc tgt gag ttt gcc cag gaa cag gag gtg aac      751
Val Arg Ser Tyr Thr Leu Cys Glu Phe Ala Gln Glu Gln Glu Val Asn
102                107                 112                 117

cat cga gag att ctg cgt gag cac ctg aag gaa gag aaa ctc cat gcc      799
His Arg Glu Ile Leu Arg Glu His Leu Lys Glu Glu Lys Leu His Ala
118                123                 128                 133

aag aaa atg aag ctg acc aag aat ggg aca gtg gag tcg gtg gag gct      847
Lys Lys Met Lys Leu Thr Lys Asn Gly Thr Val Glu Ser Val Glu Ala
134                139                 144                 149

gat ggc ctg acg ctg gat gat gtg tca gat gaa gat att gat gtg gaa      895
Asp Gly Leu Thr Leu Asp Asp Val Ser Asp Glu Asp Ile Asp Val Glu
150                155                 160                 165

aat gtg gag gtg gat gat tac ttc ttc ctg cag cct ctg ccc acc aaa      943
Asn Val Glu Val Asp Asp Tyr Phe Phe Leu Gln Pro Leu Pro Thr Lys
166                171                 176                 181

cgg cga cgg gcc ctg ctg agg gct tct ggg gtc cac cgt att gat gct      991
Arg Arg Arg Ala Leu Leu Arg Ala Ser Gly Val His Arg Ile Asp Ala
182                187                 192                 197

gaa gag aag caa gaa ctt cga gcc atc cgc ctg tca cgg gaa gaa tgt     1039
Glu Glu Lys Gln Glu Leu Arg Ala Ile Arg Leu Ser Arg Glu Glu Cys
198                203                 208                 213

ggt tgt gac tgc cga ctg tat tgt gac cca taa gcgtgtgc ctgcagccag     1090
Gly Cys Asp Cys Arg Leu Tyr Cys Asp Pro  *
214                219                 224

gctgggatta aatgccaggt ggatcgcatg tcctttccat gtggctgctc ccgggatggc   1150

tgtgggaaca tggcaggacg cattgaattt aatccaatcc gggtccggac tcattacctc   1210

cacaccatta tgaagctgga gctggagagc aagcggcagg tgagccgccc agcagcccca   1270

gatgaggagc cctccccgac tgccagttgc agcctgacag gagcacaggg ctctgagacc   1330

caggacttcc aggagttcat tgctgagaat gagacagcag tgatgcacct gcagagtgca   1390

gaggaactgg agcggctc                                                 1408
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<210> 240
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<213> Homo sapiens

<220>
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<222> (1)..(4953)

<400> 240
atg gcc tgt gct gtg gtt tca gag aag cac aag gca gga agc aag agg      48
Met Ala Cys Ala Val Val Ser Glu Lys His Lys Ala Gly Ser Lys Arg
1               5                   10

cat tta gca cag gct cat ggt gag atg ctg tca ggt atc acc tac att      96
His Leu Ala Gln Ala His Gly Glu Met Leu Ser Gly Ile Thr Tyr Ile
17                  22                  27                  32

aag ttt gtc aaa gtc cct ggg gaa ctg gtt act gca aag atg gct gaa     144
Lys Phe Val Lys Val Pro Gly Glu Leu Val Thr Ala Lys Met Ala Glu
33                  38                  43                  48

ata aga gag cag tgt gtg gca ggc ccc cgt gga gga tca acg cag tgg     192
Ile Arg Glu Gln Cys Val Ala Gly Pro Arg Gly Gly Ser Thr Gln Trp
49                  54                  59                  64

ctg aac acc ggg aag gaa ctg gca ctt gga gtc tgg aca ttt gaa act     240
Leu Asn Thr Gly Lys Glu Leu Ala Leu Gly Val Trp Thr Phe Glu Thr
65                  70                  75                  80

tgg gag aga ggc tca cca ctt ttg agt cca cgg ggc ttg cac ctc cac     288
Trp Glu Arg Gly Ser Pro Leu Leu Ser Pro Arg Gly Leu His Leu His
81                  86                  91                  96

aag aca aac atc cct agg cca ccc aga gta ggc aag aga gga ggt gaa     336
Lys Thr Asn Ile Pro Arg Pro Pro Arg Val Gly Lys Arg Gly Gly Glu
97                  102                 107                 112

gcc tcg gga gaa acc cct ccc ttg gca gct ggt tta aga ccc aaa acg     384
Ala Ser Gly Glu Thr Pro Pro Leu Ala Ala Gly Leu Arg Pro Lys Thr
113                 118                 123                 128

ggg ata caa atg ccc ctg aga gag cag tgg tat act gga ata gat gag     432
Gly Ile Gln Met Pro Leu Arg Glu Gln Trp Tyr Thr Gly Ile Asp Glu
129                 134                 139                 144

gat ggg cac atg gtg gag agg cgt gtt ttt gtg tac cag ccc ttc ttc     480
Asp Gly His Met Val Glu Arg Arg Val Phe Val Tyr Gln Pro Phe Phe
145                 150                 155                 160

tct gcc gac ctc ctc aac tgg aaa aac aat acc cca tcc tat act gaa     528
Ser Ala Asp Leu Leu Asn Trp Lys Asn Asn Thr Pro Ser Tyr Thr Glu
161                 166                 171                 176

aag ccg caa gct cta att gat ttg ctc caa act att atc cag acc cat     576
Lys Pro Gln Ala Leu Ile Asp Leu Leu Gln Thr Ile Ile Gln Thr His
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177                 182                 187                 192

aac ccc act tgg gct gat tgc cac cag ttg ctc atg ttc ctc ttt aac      624
Asn Pro Thr Trp Ala Asp Cys His Gln Leu Leu Met Phe Leu Phe Asn
193                 198                 203                 208

aca gat gaa agg cgg aga gtg ctc caa gca gca act aag tgg cta gag      672
Thr Asp Glu Arg Arg Arg Val Leu Gln Ala Ala Thr Lys Trp Leu Glu
209                 214                 219                 224

gaa cat gca ccg gct gat tac caa aac ccc caa gag tat gta agg acc      720
Glu His Ala Pro Ala Asp Tyr Gln Asn Pro Gln Glu Tyr Val Arg Thr
225                 230                 235                 240

cag tta ccg gga acc gac ccc cag tgg gac cca aat gaa aga gag gat      768
Gln Leu Pro Gly Thr Asp Pro Gln Trp Asp Pro Asn Glu Arg Glu Asp
241                 246                 251                 256

atg caa agg cta aac cga tac agg gaa gct ctc ttg gaa gga tta aag      816
Met Gln Arg Leu Asn Arg Tyr Arg Glu Ala Leu Leu Glu Gly Leu Lys
257                 262                 267                 272

agg gga gcc cag aag gcc aca aac gtg gcc att cag gga aaa gaa gaa      864
Arg Gly Ala Gln Lys Ala Thr Asn Val Ala Ile Gln Gly Lys Glu Glu
273                 278                 283                 288

agt cca gca caa ttc tac gag agg ctg tgt gag gcc tat tgt atg tat      912
Ser Pro Ala Gln Phe Tyr Glu Arg Leu Cys Glu Ala Tyr Cys Met Tyr
289                 294                 299                 304

act ccc ttt gat ccc aat agt cct gaa aat cag cgc atg att aac atg      960
Thr Pro Phe Asp Pro Asn Ser Pro Glu Asn Gln Arg Met Ile Asn Met
305                 310                 315                 320

gct tta gtt agt caa agt gca gaa gac att aga aga aaa ctg cag aaa     1008
Ala Leu Val Ser Gln Ser Ala Glu Asp Ile Arg Arg Lys Leu Gln Lys
321                 326                 331                 336

cag gct ggg ttt gca ggg atg aac aca tca cag tta tta gaa ata gct     1056
Gln Ala Gly Phe Ala Gly Met Asn Thr Ser Gln Leu Leu Glu Ile Ala
337                 342                 347                 352

aac cag gtg ttt gta aac agg gat gca gta agc cct aag gaa aac cgc     1104
Asn Gln Val Phe Val Asn Arg Asp Ala Val Ser Pro Lys Glu Asn Arg
353                 358                 363                 368

aga gag aat gaa cat cag gtc cgg cga aat gcc gac ctg tta gct gca     1152
Arg Glu Asn Glu His Gln Val Arg Arg Asn Ala Asp Leu Leu Ala Ala
369                 374                 379                 384

gca atc aca ggg gtc ccc cca aag agg caa ggg aag ggg ggc ccc ggg     1200
Ala Ile Thr Gly Val Pro Pro Lys Arg Gln Gly Lys Gly Gly Pro Gly
385                 390                 395                 400

aaa gaa att cag cct ggt tgt cag agc ttg cag cgt aat cag tgt gct     1248
Lys Glu Ile Gln Pro Gly Cys Gln Ser Leu Gln Arg Asn Gln Cys Ala
401                 406                 411                 416
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tat tgt aaa gaa ata gga cat tgg aag aac aaa tgc cct cag cta aaa      1296
Tyr Cys Lys Glu Ile Gly His Trp Lys Asn Lys Cys Pro Gln Leu Lys
417                 422                 427                 432

gga aaa caa ggt gac tcg gag cag gag gat cca gac aag gag gaa ggg      1344
Gly Lys Gln Gly Asp Ser Glu Gln Glu Asp Pro Asp Lys Glu Glu Gly
433                 438                 443                 448

gcc ctg ctc aac ctg gca gaa agg acc ccc aaa gag cct atg gtc agg      1392
Ala Leu Leu Asn Leu Ala Glu Arg Thr Pro Lys Glu Pro Met Val Arg
449                 454                 459                 464

atg aca gtt ggg ggt aaa gac att gat ttt ctt gta gat acc ggt gct      1440
Met Thr Val Gly Gly Lys Asp Ile Asp Phe Leu Val Asp Thr Gly Ala
465                 470                 475                 480

gaa cat tcg gta gta acc acc ccg gtc agc ccc tta tcc aaa aag act      1488
Glu His Ser Val Val Thr Thr Pro Val Ser Pro Leu Ser Lys Lys Thr
481                 486                 491                 496

att gac ata att gga gcc aca gga gtt tca gca aaa caa gct ttc tgc      1536
Ile Asp Ile Ile Gly Ala Thr Gly Val Ser Ala Lys Gln Ala Phe Cys
497                 502                 507                 512

ttg ccc cgg act tgt act gta gga gga cat aaa gtg att cat cag ttt      1584
Leu Pro Arg Thr Cys Thr Val Gly Gly His Lys Val Ile His Gln Phe
513                 518                 523                 528

ttg tac atg cct gat tgt ccc ttg ccc ttg ttg gga agg gac ttg ctt      1632
Leu Tyr Met Pro Asp Cys Pro Leu Pro Leu Leu Gly Arg Asp Leu Leu
529                 534                 539                 544

agc aaa ctg aga gcc act atc tat ttt aca gag cat ggc tct ttg ctg      1680
Ser Lys Leu Arg Ala Thr Ile Tyr Phe Thr Glu His Gly Ser Leu Leu
545                 550                 555                 560

cta aag tta ccc gga acg gga gtc att atg acc ctt atg gta ccc cga      1728
Leu Lys Leu Pro Gly Thr Gly Val Ile Met Thr Leu Met Val Pro Arg
561                 566                 571                 576

gag gag gaa tgg aaa ctt ttc tta act gag tcg ggc caa gag ata aga      1776
Glu Glu Glu Trp Lys Leu Phe Leu Thr Glu Ser Gly Gln Glu Ile Arg
577                 582                 587                 592

cca gct ctg gct aag tgg tgg cca aga gtg tgg gca gaa gac aac cct      1824
Pro Ala Leu Ala Lys Trp Trp Pro Arg Val Trp Ala Glu Asp Asn Pro
593                 598                 603                 608

cca ggg ttg gca gtc aac caa gcc ccc gta ctt ata gaa gtt aag cct      1872
Pro Gly Leu Ala Val Asn Gln Ala Pro Val Leu Ile Glu Val Lys Pro
609                 614                 619                 624

agg gcc cag ccg gtt agg caa aaa cag tac ccg gtc ccc aga gaa gct      1920
Arg Ala Gln Pro Val Arg Gln Lys Gln Tyr Pro Val Pro Arg Glu Ala
625                 630                 635                 640
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ctt caa ggt atc cag gtc cat ctc aag tgc cta aga acc ttt gga att      1968
Leu Gln Gly Ile Gln Val His Leu Lys Cys Leu Arg Thr Phe Gly Ile
641                 646                 651                 656

ata gtt cct tgt cag tct cca tgg aac act ccc ctc ctg cct gtt ccc      2016
Ile Val Pro Cys Gln Ser Pro Trp Asn Thr Pro Leu Leu Pro Val Pro
657                 662                 667                 672

aag cct ggg acc aag gac tac agg ccg gta cag gat ttg cgc ttg gtt      2064
Lys Pro Gly Thr Lys Asp Tyr Arg Pro Val Gln Asp Leu Arg Leu Val
673                 678                 683                 688

aat cag gct aca gtg act tta cac cca aca gta cct aac tgg tac aca      2112
Asn Gln Ala Thr Val Thr Leu His Pro Thr Val Pro Asn Trp Tyr Thr
689                 694                 699                 704

ttg ctg ggg ttg ctg cca gct gag gac agc tgg ttc acc tgc ttg gac      2160
Leu Leu Gly Leu Leu Pro Ala Glu Asp Ser Trp Phe Thr Cys Leu Asp
705                 710                 715                 720

ctg aaa gat gct ttc ttt agc atc aga tta gcc cct gag agc cag aag      2208
Leu Lys Asp Ala Phe Phe Ser Ile Arg Leu Ala Pro Glu Ser Gln Lys
721                 726                 731                 736

ctg ttt gcc ttt cag tgg gaa gat ccg gag tca ggt gtc act act cag      2256
Leu Phe Ala Phe Gln Trp Glu Asp Pro Glu Ser Gly Val Thr Thr Gln
737                 742                 747                 752

tac act tgg atc cgg ctt ccc aaa ggg ttc aag aac tcc ccc acc atc      2304
Tyr Thr Trp Ile Arg Leu Pro Lys Gly Phe Lys Asn Ser Pro Thr Ile
753                 758                 763                 768

ttc ggg gag gca ttg gct caa gac ctc cag aag ttt ccc acc aga gac      2352
Phe Gly Glu Ala Leu Ala Gln Asp Leu Gln Lys Phe Pro Thr Arg Asp
769                 774                 779                 784

cta ggc tgc atg ttg ctc cag tac gtt gat gac ctt ttt ctg gga cac      2400
Leu Gly Cys Met Leu Leu Gln Tyr Val Asp Asp Leu Phe Leu Gly His
785                 790                 795                 800

cct acg gca gtc agg tgc gcc aag gga aca gat gct cta ctc cgg cac      2448
Pro Thr Ala Val Arg Cys Ala Lys Gly Thr Asp Ala Leu Leu Arg His
801                 806                 811                 816

ctg gag gac tgt ggg tat aag gtg ttc aag aaa aaa gtt cag atc tgc      2496
Leu Glu Asp Cys Gly Tyr Lys Val Phe Lys Lys Lys Val Gln Ile Cys
817                 822                 827                 832

cga cag cag gta cgt tac ttg gga ttt act atc cgg cag ggg gag tgc      2544
Arg Gln Gln Val Arg Tyr Leu Gly Phe Thr Ile Arg Gln Gly Glu Cys
833                 838                 843                 848

agc ctg gga tca aaa aga aag caa gtc att tgt aat cta ccg gag cct      2592
Ser Leu Gly Ser Lys Arg Lys Gln Val Ile Cys Asn Leu Pro Glu Pro
849                 854                 859                 864

aag acc aga agg cag agc cct gtc aag cat gac tgt gta gaa gtg ttg      2640
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Lys Thr Arg Arg Gln Ser Pro Val Lys His Asp Cys Val Glu Val Leu
865                 870                 875                 880

gac tca gtt tac tct agc aga cct gac ctc cgg gac cag cct tgg gca      2688
Asp Ser Val Tyr Ser Ser Arg Pro Asp Leu Arg Asp Gln Pro Trp Ala
881                 886                 891                 896

tca gta gac tgg gta cta tac gtg gat ggg agc agc ttc atc aac cca      2736
Ser Val Asp Trp Val Leu Tyr Val Asp Gly Ser Ser Phe Ile Asn Pro
897                 902                 907                 912

caa gga gag aga tgt gca ggg tat gcg gtg gta act ctg gac act gtt      2784
Gln Gly Glu Arg Cys Ala Gly Tyr Ala Val Val Thr Leu Asp Thr Val
913                 918                 923                 928

gtt gaa gcc cga tcg ttg ccc cag ggc act tca gct cag aaa act gaa      2832
Val Glu Ala Arg Ser Leu Pro Gln Gly Thr Ser Ala Gln Lys Thr Glu
929                 934                 939                 944

ctc att gct tta att tgg gcc tta gaa ctc agt gaa gca cct gat ctt      2880
Leu Ile Ala Leu Ile Trp Ala Leu Glu Leu Ser Glu Ala Pro Asp Leu
945                 950                 955                 960

gta cct act tat tct aaa gaa gaa aat gac ttt ctc cag gca gag gga      2928
Val Pro Thr Tyr Ser Lys Glu Glu Asn Asp Phe Leu Gln Ala Glu Gly
961                 966                 971                 976

gga caa gtg atg gag gaa gga ttg att cgg tta cca gat ggg aga gta      2976
Gly Gln Val Met Glu Glu Gly Leu Ile Arg Leu Pro Asp Gly Arg Val
977                 982                 987                 992

gct gtg cca cag ctg cta gga gct gca gtt gta ctg gct gtc cat gaa      3024
Ala Val Pro Gln Leu Leu Gly Ala Ala Val Val Leu Ala Val His Glu
993                 998                1003                1008

acc acc cat cta ggt cag gaa tca ctt gaa aag ttg tta ggc tgg tat      3072
Thr Thr His Leu Gly Gln Glu Ser Leu Glu Lys Leu Leu Gly Trp Tyr
1009               1014                1019                1024

ttc tac atc tcg cat ttg tca gcc ctt gcc aaa acg gtg acc cag cgg      3120
Phe Tyr Ile Ser His Leu Ser Ala Leu Ala Lys Thr Val Thr Gln Arg
1025               1030                1035                1040

tgt gtt acc tgc cga cag cat aat gcg agg caa ggt cta gct gtt cca      3168
Cys Val Thr Cys Arg Gln His Asn Ala Arg Gln Gly Leu Ala Val Pro
1041               1046                1051                1056

cct ggc ata caa gct tat gga gaa gcc ccc ttt gaa gat ctg gat cca      3216
Pro Gly Ile Gln Ala Tyr Gly Glu Ala Pro Phe Glu Asp Leu Asp Pro
1057               1062                1067                1072

ggt gga ctt cac aga gat gcc aaa gtg tgg aga ttt gga ctg cct tta      3264
Gly Gly Leu His Arg Asp Ala Lys Val Trp Arg Phe Gly Leu Pro Leu
1073               1078                1083                1088

tgg atc ggc tca gat aac ggg ccg gca ttt gtg gct gac ttg gta cag      3312
Trp Ile Gly Ser Asp Asn Gly Pro Ala Phe Val Ala Asp Leu Val Gln
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1089                1094                1099                1104

 aag atg gca aag gta ttg ggg atc aca tgg aaa ctg cat gct gcc tac      3360
 Lys Met Ala Lys Val Leu Gly Ile Thr Trp Lys Leu His Ala Ala Tyr
1105                1110                1115                1120

 cgg cct cag agt tcc gga aag gtg gag cag atg aat cgg act atc aaa      3408
 Arg Pro Gln Ser Ser Gly Lys Val Glu Gln Met Asn Arg Thr Ile Lys
1121                1126                1131                1136

 aat agt tta ggg aaa aac aaa aag gac cca gtt tat ctt cag aag ggg      3456
 Asn Ser Leu Gly Lys Asn Lys Lys Asp Pro Val Tyr Leu Gln Lys Gly
1137                1142                1147                1152

 gaa gcc aac ccc tcc tgt gct gcc ggt cac tgt aac cca cta gaa cta      3504
 Glu Ala Asn Pro Ser Cys Ala Ala Gly His Cys Asn Pro Leu Glu Leu
1153                1158                1163                1168

 ata att acc aat ccc cta gat ccc cgt tgg aaa aac gga gaa cgt gta      3552
 Ile Ile Thr Asn Pro Leu Asp Pro Arg Trp Lys Asn Gly Glu Arg Val
1169                1174                1179                1184

 acc ctg ggg att gat ggg aca ggg tta aac ccc caa gtt gcc att tta      3600
 Thr Leu Gly Ile Asp Gly Thr Gly Leu Asn Pro Gln Val Ala Ile Leu
1185                1190                1195                1200

 att aga ggg gag gtc ccc aag cgc tct ccc aaa cca gta ttt caa acc      3648
 Ile Arg Gly Glu Val Pro Lys Arg Ser Pro Lys Pro Val Phe Gln Thr
1201                1206                1211                1216

 ttt tat gag gag ctg aat ctg cca gca cca gaa ctt cca aaa aag aca      3696
 Phe Tyr Glu Glu Leu Asn Leu Pro Ala Pro Glu Leu Pro Lys Lys Thr
1217                1222                1227                1232

 aaa aat ttg ttt ctc caa tta gca gaa aat gta gct cat tcc ctt aaa      3744
 Lys Asn Leu Phe Leu Gln Leu Ala Glu Asn Val Ala His Ser Leu Lys
1233                1238                1243                1248

 gtt act tct tgt tat gta tgc ggg gga acc act atc gga gac cga tgg      3792
 Val Thr Ser Cys Tyr Val Cys Gly Gly Thr Thr Ile Gly Asp Arg Trp
1249                1254                1259                1264

 cct tgg gaa gcc cga gag ttg gtg cct act gat cca gct cct gac ata      3840
 Pro Trp Glu Ala Arg Glu Leu Val Pro Thr Asp Pro Ala Pro Asp Ile
1265                1270                1275                1280

 att cca gtt cag aag gcc caa gct agc aac ttc tgg gtc tta aaa acc      3888
 Ile Pro Val Gln Lys Ala Gln Ala Ser Asn Phe Trp Val Leu Lys Thr
1281                1286                1291                1296

 tca att att gga caa tac tgt ata gct aga gaa ggg aaa gac ttt atc      3936
 Ser Ile Ile Gly Gln Tyr Cys Ile Ala Arg Glu Gly Lys Asp Phe Ile
1297                1302                1307                1312

 atc cct gta gga aag ctt aat tgt ata gga cag aag ttg tat aac agc      3984
 Ile Pro Val Gly Lys Leu Asn Cys Ile Gly Gln Lys Leu Tyr Asn Ser
1313                1318                1323                1328
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aca aca aag aca att act tgt tgg ggc cta aac cac act gaa aag aat      4032
Thr Thr Lys Thr Ile Thr Cys Trp Gly Leu Asn His Thr Glu Lys Asn
1329                1334                1339                1344

cca ttt agt aaa ttt tct aag tta aaa act gct tgg gct cat cca gaa      4080
Pro Phe Ser Lys Phe Ser Lys Leu Lys Thr Ala Trp Ala His Pro Glu
1345                1350                1355                1360

tct cat cag gac tgg atg gct ccc gct gga cta tac tgg ata tgt ggg      4128
Ser His Gln Asp Trp Met Ala Pro Ala Gly Leu Tyr Trp Ile Cys Gly
1361                1366                1371                1376

cac aga gcc tat att cgg tta cct gat aaa tgg gca ggc agt tgt gtt      4176
His Arg Ala Tyr Ile Arg Leu Pro Asp Lys Trp Ala Gly Ser Cys Val
1377                1382                1387                1392

att ggc act att aag ctg tgc ttt ttc tta tta ccc ata aaa acg ggt      4224
Ile Gly Thr Ile Lys Leu Cys Phe Phe Leu Leu Pro Ile Lys Thr Gly
1393                1398                1403                1408

gag ctc cta ggt ttc ccc atc tat gcc tcc caa gaa aag aga ggc ata      4272
Glu Leu Leu Gly Phe Pro Ile Tyr Ala Ser Gln Glu Lys Arg Gly Ile
1409                1414                1419                1424

gtt ata gga aac tgg aaa gat aat gag tgg ccc cct gaa agg atc ata      4320
Val Ile Gly Asn Trp Lys Asp Asn Glu Trp Pro Pro Glu Arg Ile Ile
1425                1430                1435                1440

cag tat tat ggg cct gcc aca tgg gca caa gac ggc tca tgg gga tac      4368
Gln Tyr Tyr Gly Pro Ala Thr Trp Ala Gln Asp Gly Ser Trp Gly Tyr
1441                1446                1451                1456

cga acc ccc atc tac atg ctc aat cgg atc ata cgg ttg cag gcc atc      4416
Arg Thr Pro Ile Tyr Met Leu Asn Arg Ile Ile Arg Leu Gln Ala Ile
1457                1462                1467                1472

tta aaa ata att act aat gaa act ggc aga gct ttg act gtt ttg gct      4464
Leu Lys Ile Ile Thr Asn Glu Thr Gly Arg Ala Leu Thr Val Leu Ala
1473                1478                1483                1488

tgg caa gaa acc caa atg agg aat gct atc tat cag aat aga ctg gcc      4512
Trp Gln Glu Thr Gln Met Arg Asn Ala Ile Tyr Gln Asn Arg Leu Ala
1489                1494                1499                1504

ttg gac tac ttg cta gca gct gaa gga gga gtt tgt gga aac ttt aac      4560
Leu Asp Tyr Leu Leu Ala Ala Glu Gly Gly Val Cys Gly Asn Phe Asn
1505                1510                1515                1520

tta acc aat tgc tgc cta caa ata gat gat caa gga cag gtg gtt gaa      4608
Leu Thr Asn Cys Cys Leu Gln Ile Asp Asp Gln Gly Gln Val Val Glu
1521                1526                1531                1536

aac ata gtc agg gac atg aca aag gtg gca cat gtg cct gta cag att      4656
Asn Ile Val Arg Asp Met Thr Lys Val Ala His Val Pro Val Gln Ile
1537                1542                1547                1552
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aaa ctg tac acg agt tta atc ctg agt ctt tat ttg gaa aat ggt ttc      4704
Lys Leu Tyr Thr Ser Leu Ile Leu Ser Leu Tyr Leu Glu Asn Gly Phe
1553                1558                1563                1568

cag cta tgg gag gat tta aaa ccc tca tta agt aca tct aac tgt cct      4752
Gln Leu Trp Glu Asp Leu Lys Pro Ser Leu Ser Thr Ser Asn Cys Pro
1569                1574                1579                1584

aag aat aaa gat aag gat gaa gac caa tct gaa ctg ctt act gct gac      4800
Lys Asn Lys Asp Lys Asp Glu Asp Gln Ser Glu Leu Leu Thr Ala Asp
1585                1590                1595                1600

aga ggg ggc tgt ttt ggg gaa atg gca gtc aga act ccc tca gag gcc      4848
Arg Gly Gly Cys Phe Gly Glu Met Ala Val Arg Thr Pro Ser Glu Ala
1601                1606                1611                1616

tat cta aag gtt ccc agc aga aga agc cat cgt cca aag ctc cgg ttg      4896
Tyr Leu Lys Val Pro Ser Arg Arg Ser His Arg Pro Lys Leu Arg Leu
1617                1622                1627                1632

aat gac tgt ttg gag ttt gat ggc ctg aag gca aga aca gac aaa ctg      4944
Asn Asp Cys Leu Glu Phe Asp Gly Leu Lys Ala Arg Thr Asp Lys Leu
1633                1638                1643                1648

ggc tat tag                                                          4953
Gly Tyr  *
1649




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      <222> (10)..(705)

      <400> 241
atctattcg   atg atg aag ata ccc cac caa acc caa aaa aag aga tct      48
            Met Met Lys Ile Pro His Gln Thr Gln Lys Lys Arg Ser
              1               5                   10

ctc gag gat ccg aat tcg cgg ccg cgt cga cct atg agc tgc acc atc      96
Leu Glu Asp Pro Asn Ser Arg Pro Arg Arg Pro Met Ser Cys Thr Ile
 14                 19                  24                  29

gag aag atc ctg aca gac gcc aag acg ctg ctg gag agg cta cgg gag      144
Glu Lys Ile Leu Thr Asp Ala Lys Thr Leu Leu Glu Arg Leu Arg Glu
 30                 35                  40                  45

cac gat gcg gcc gcc gag tcg ctg gtg gat cag tcg gcg gcg ctg cac      192
His Asp Ala Ala Ala Glu Ser Leu Val Asp Gln Ser Ala Ala Leu His
 46                 51                  56                  61
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cgg cgg gta gca gct atg cgg gag gcg ggg aca gcg ctt ccg gac cag      240
Arg Arg Val Ala Ala Met Arg Glu Ala Gly Thr Ala Leu Pro Asp Gln
 62                 67                  72                  77

tat caa gag gat gca tcc gat atg aag gac atg tcc aaa tac aaa cct      288
Tyr Gln Glu Asp Ala Ser Asp Met Lys Asp Met Ser Lys Tyr Lys Pro
 78                 83                  88                  93

cac att ctg ctg tcc caa gag aac aca cag att aga gac ttg caa cag      336
His Ile Leu Leu Ser Gln Glu Asn Thr Gln Ile Arg Asp Leu Gln Gln
 94                 99                 104                 109

gaa aac aga gag cta tgg att tcc ttg gag gaa cac cag gat gct ttg      384
Glu Asn Arg Glu Leu Trp Ile Ser Leu Glu Glu His Gln Asp Ala Leu
110                115                 120                 125

gaa ctt atc atg agc aaa tat cgg aaa cag atg tta cag tta atg gtt      432
Glu Leu Ile Met Ser Lys Tyr Arg Lys Gln Met Leu Gln Leu Met Val
126                131                 136                 141

gct aaa aaa gcg gtg gat gct gaa cca gtc ctg aaa gct cac cag tct      480
Ala Lys Lys Ala Val Asp Ala Glu Pro Val Leu Lys Ala His Gln Ser
142                147                 152                 157

cac tct gca gaa att gag agt cag att gac aga atc tgt gaa atg gga      528
His Ser Ala Glu Ile Glu Ser Gln Ile Asp Arg Ile Cys Glu Met Gly
158                163                 168                 173

gaa gtg atg agg aaa gca gtt cag gtg gat gat gac cag ttt tgt aag      576
Glu Val Met Arg Lys Ala Val Gln Val Asp Asp Asp Gln Phe Cys Lys
174                179                 184                 189

att cag gaa aaa tta gcc caa tta gag ctt gaa aat aag gaa ctt cga      624
Ile Gln Glu Lys Leu Ala Gln Leu Glu Leu Glu Asn Lys Glu Leu Arg
190                195                 200                 205

gaa tta ttg tcc atc agc agt gag tct ctt caa gcc aga aag gaa aac      672
Glu Leu Leu Ser Ile Ser Ser Glu Ser Leu Gln Ala Arg Lys Glu Asn
206                211                 216                 221

tca atg gac act gct tcc caa gcc atc aaa taa ctgaactc tgaatgatgg      723
Ser Met Asp Thr Ala Ser Gln Ala Ile Lys  *
222                227                 232

ctggagattg tctatcaagg aaggaagtta ctgtcttccc attcaagtac tgtccattaa    783

gtgtcttgcc tcagatttga tttaatctta attaaaggta tcaggtggca aaaaaaaaaa    843

a                                                                    844
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<210> 242
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<220>
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<222> (416)..(2353)

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<222> (1)...(2753)
<223> n = a,t,c or g

<400> 242
ccgagccgag cgccgaggac cgtgctaccc caggcccggg ctcgcccagc gcaggctcct      60

ctctggcagc agcggcggcg cggngacccc ngtccctcgg cctccnnttc ccatcccacc     120

tcccgagcct tcctcttccc gcagcacgcc cggcccggcc cggccgtggc cctcctcagt     180

gccggccgcc atggcagagg cgtccggcgc ggggaaaatc tagcccgggg atttcatgcg     240

gcctagctcg gttccgcctc ctcctcgcgc ggccccagcg gctgcccgca ccccagcccc     300

actccgggcc tccgtgtctc tcctgtgatc gcactgacac ggccgggggg ttagaatgga     360

acaaactgaa ggcccgatga gagaaaggga aagttaagga tgctggagca gaaca atg      418
                                                             Met
                                                             1

gat ttc tct ttc tct ttc atg caa ggg atc atg gga aac aca att cag      466
Asp Phe Ser Phe Ser Phe Met Gln Gly Ile Met Gly Asn Thr Ile Gln
2               7                   12                  17

caa cca cct caa ctc att gac tcc gcc aac atc cgt cag gag gat gcc      514
Gln Pro Pro Gln Leu Ile Asp Ser Ala Asn Ile Arg Gln Glu Asp Ala
18                  23                  28                  33

ttt gat aac aac agt gac att gct gaa gat ggt ggc cag aca cca tat      562
Phe Asp Asn Asn Ser Asp Ile Ala Glu Asp Gly Gly Gln Thr Pro Tyr
34                  39                  44                  49

gaa gct act ttg cag caa ggc ttt cag tac cca gct aca aca gaa gat      610
Glu Ala Thr Leu Gln Gln Gly Phe Gln Tyr Pro Ala Thr Thr Glu Asp
50                  55                  60                  65

ctt cct cca ctc aca aat ggg tat cca tca tca atc agt gtg tat gaa      658
Leu Pro Pro Leu Thr Asn Gly Tyr Pro Ser Ser Ile Ser Val Tyr Glu
66                  71                  76                  81

act caa acc aaa tac cag tca tat aat cag tat cct aat ggg tca gcc      706
Thr Gln Thr Lys Tyr Gln Ser Tyr Asn Gln Tyr Pro Asn Gly Ser Ala
82                  87                  92                  97

aat ggc ttt ggt gca gtt aga aac ttt agc ccc act gac tat tat cat      754
Asn Gly Phe Gly Ala Val Arg Asn Phe Ser Pro Thr Asp Tyr Tyr His
98                  103                 108                 113

tca gaa att cca aac aca aga cca cat gaa att ctg gaa aaa cct tcc      802
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Ser Glu Ile Pro Asn Thr Arg Pro His Glu Ile Leu Glu Lys Pro Ser
114                 119                 124                 129

cct cca cag cca cca cct cct cct tcg gta cca caa act gtg att cca      850
Pro Pro Gln Pro Pro Pro Pro Pro Ser Val Pro Gln Thr Val Ile Pro
130                 135                 140                 145

aag aag act ggc tca cct gaa att aaa cta aaa ata acc aaa act atc      898
Lys Lys Thr Gly Ser Pro Glu Ile Lys Leu Lys Ile Thr Lys Thr Ile
146                 151                 156                 161

cag aat ggc agg gaa ttg ttt gag tct tcc ctt tgt gga gac ctt tta      946
Gln Asn Gly Arg Glu Leu Phe Glu Ser Ser Leu Cys Gly Asp Leu Leu
162                 167                 172                 177

aat gaa gta cag gca agt gag cac acg aaa tca aag cat gaa agc aga      994
Asn Glu Val Gln Ala Ser Glu His Thr Lys Ser Lys His Glu Ser Arg
178                 183                 188                 193

aaa gaa aag agg aaa aaa agc aac aag cat gac tca tca aga tct gaa     1042
Lys Glu Lys Arg Lys Lys Ser Asn Lys His Asp Ser Ser Arg Ser Glu
194                 199                 204                 209

gag cgc aag tca cac aaa atc ccc aaa tta gaa cca gag gaa caa aat     1090
Glu Arg Lys Ser His Lys Ile Pro Lys Leu Glu Pro Glu Glu Gln Asn
210                 215                 220                 225

aga cca aat gag agg gtt gac act gta tca gaa aaa cca agg gaa gaa     1138
Arg Pro Asn Glu Arg Val Asp Thr Val Ser Glu Lys Pro Arg Glu Glu
226                 231                 236                 241

cca gta cta aaa gag gaa gcc cca gtt cag cca ata cta tct tct gtt     1186
Pro Val Leu Lys Glu Glu Ala Pro Val Gln Pro Ile Leu Ser Ser Val
242                 247                 252                 257

cca aca acg gaa gtg tcc act ggt gtt aag ttt cag gtt ggc gat ctt     1234
Pro Thr Thr Glu Val Ser Thr Gly Val Lys Phe Gln Val Gly Asp Leu
258                 263                 268                 273

gtg tgg tcc aag gtg gga acc tat cct tgg tgg cct tgt atg gtt tca     1282
Val Trp Ser Lys Val Gly Thr Tyr Pro Trp Trp Pro Cys Met Val Ser
274                 279                 284                 289

agt gat ccc cag ctt gag gtt cat act aaa att aac aca aga ggt gcc     1330
Ser Asp Pro Gln Leu Glu Val His Thr Lys Ile Asn Thr Arg Gly Ala
290                 295                 300                 305

cga gaa tat cat gtc cag ttt ttt agc aac cag cca gag agg gcg tgg     1378
Arg Glu Tyr His Val Gln Phe Phe Ser Asn Gln Pro Glu Arg Ala Trp
306                 311                 316                 321

gtt cat gaa aaa cgg gta cga gag tat aaa ggt cat aaa cag tat gaa     1426
Val His Glu Lys Arg Val Arg Glu Tyr Lys Gly His Lys Gln Tyr Glu
322                 327                 332                 337

gaa tta ctg gct gag gca acc aaa caa gcc agc aat cac tct gag aaa     1474
Glu Leu Leu Ala Glu Ala Thr Lys Gln Ala Ser Asn His Ser Glu Lys
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338                 343                 348                 353

caa aag att cgg aaa ccc cga cct cag aga gaa cgt gct cag tgg gat      1522
Gln Lys Ile Arg Lys Pro Arg Pro Gln Arg Glu Arg Ala Gln Trp Asp
354                 359                 364                 369

att ggc att gcc cat gca gag aaa gca ttg aaa atg act cga gaa gaa      1570
Ile Gly Ile Ala His Ala Glu Lys Ala Leu Lys Met Thr Arg Glu Glu
370                 375                 380                 385

aga ata gaa cag tat act ttt att tac att gat aaa cag cct gaa gag      1618
Arg Ile Glu Gln Tyr Thr Phe Ile Tyr Ile Asp Lys Gln Pro Glu Glu
386                 391                 396                 401

gct tta tcc caa gca aaa aag agt gtt gcc tcc aaa acc gaa gtt aaa      1666
Ala Leu Ser Gln Ala Lys Lys Ser Val Ala Ser Lys Thr Glu Val Lys
402                 407                 412                 417

aaa acc cga cga cca aga tct gtg ctg aat act cag cca gaa cag acc      1714
Lys Thr Arg Arg Pro Arg Ser Val Leu Asn Thr Gln Pro Glu Gln Thr
418                 423                 428                 433

aat gca ggg gag gtg gcc tcc tca ctc tca agt act gaa att cgg aga      1762
Asn Ala Gly Glu Val Ala Ser Ser Leu Ser Ser Thr Glu Ile Arg Arg
434                 439                 444                 449

cat agc cag agg cgg cac aca agt gcg gaa gag gaa gag cca ccg cct      1810
His Ser Gln Arg Arg His Thr Ser Ala Glu Glu Glu Glu Pro Pro Pro
450                 455                 460                 465

gtt aaa ata gcc tgg aaa act gcg gca gca agg aaa tcc tta cca gct      1858
Val Lys Ile Ala Trp Lys Thr Ala Ala Ala Arg Lys Ser Leu Pro Ala
466                 471                 476                 481

tcc att acg atg cac aaa ggg agc ctg gat ttg cag aag tgt aac atg      1906
Ser Ile Thr Met His Lys Gly Ser Leu Asp Leu Gln Lys Cys Asn Met
482                 487                 492                 497

tct cca gtt gtg aaa att gaa caa gtg ttt gct ctt cag aat gct aca      1954
Ser Pro Val Val Lys Ile Glu Gln Val Phe Ala Leu Gln Asn Ala Thr
498                 503                 508                 513

ggg gat ggg aaa ttt atc gat caa ttt gtt tat tca aca aag gga att      2002
Gly Asp Gly Lys Phe Ile Asp Gln Phe Val Tyr Ser Thr Lys Gly Ile
514                 519                 524                 529

ggt aac aaa aca gaa ata agt gtc agg ggg caa gac agg ctt ata att      2050
Gly Asn Lys Thr Glu Ile Ser Val Arg Gly Gln Asp Arg Leu Ile Ile
530                 535                 540                 545

tct aca cca aac cag aga aat gaa aag cca acg cag agt gta tca tct      2098
Ser Thr Pro Asn Gln Arg Asn Glu Lys Pro Thr Gln Ser Val Ser Ser
546                 551                 556                 561

cct gaa gca aca tct ggt tct aca ggc tca gta gaa aag aag caa cag      2146
Pro Glu Ala Thr Ser Gly Ser Thr Gly Ser Val Glu Lys Lys Gln Gln
562                 567                 572                 577
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aga aga tca att aga act cgt tct gaa tca gag aaa tcc act gag gtt      2194
Arg Arg Ser Ile Arg Thr Arg Ser Glu Ser Glu Lys Ser Thr Glu Val
578                 583                 588                 593

gtg cca aag aag aag atc aaa aag gag cag gtt gaa aca gtt cct cag      2242
Val Pro Lys Lys Lys Ile Lys Lys Glu Gln Val Glu Thr Val Pro Gln
594                 599                 604                 609

gct aca gtg aag act gga tta cag aaa ggg tcg gcg gac cgg gga gtg      2290
Ala Thr Val Lys Thr Gly Leu Gln Lys Gly Ser Ala Asp Arg Gly Val
610                 615                 620                 625

cag ggc tct gtc aga ttc agt gac agc tcc gtc tcc gca gcg att gag      2338
Gln Gly Ser Val Arg Phe Ser Asp Ser Ser Val Ser Ala Ala Ile Glu
626                 631                 636                 641

gaa act gtg gac tga gattcctgta caatttcatc ccagaaactc cagacttgta      2393
Glu Thr Val Asp  *
642

gtctccatgc aagatttctt tgtcggcggc ttgataaaca gtttctttgt tttcgatttt   2453

gatttcgcca atcatcatta ttggcatttt cctgcctggt ttcttcttca agactctgaa   2513

caattgcttt aacagtcaaa tgattttttt ttttcggttt gagctggatg ggtacagctt   2573

aaatcatggg tccagcctaa aaaccaccat ttaacttaca ctgatcaatt tcaacatgga   2633

ctgtttttgg tttttgtttt ttaaataaag catcattaat gcacatctgc aggggtttgc   2693

caaacagccc aaactgtata cattacaatc attaaaagtt cttatttttt ttaaaaaaaa   2753


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      <222> (249)..(1940)

      <400> 243
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gagggcctaa gtccgtgtgc ggtgcccttc ggccggcctg agccccagag tcagctcccc    120

tttctcgccc agcgccccca ggccgctccc ggggctcacg gaatagtaaa gaaacacatc    180

ataaaacctc ccaggacata aaggtgagca cagaccctgt ttggatcaag tcagttcctg    240

gagcctga atg atg act gct gaa tca cgg gaa gcc acg ggt ctg tcc cca     290
         Met Met Thr Ala Glu Ser Arg Glu Ala Thr Gly Leu Ser Pro
           1               5                  10
```

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cag gct gca cag gag aag gat ggt atc gta ata gtg aag gtg gaa gag      338
Gln Ala Ala Gln Glu Lys Asp Gly Ile Val Ile Val Lys Val Glu Glu
 15                  20                  25                  30

gaa gat gag gaa gac cac atg tgg ggg cag gat tcc acc cta cag gac      386
Glu Asp Glu Glu Asp His Met Trp Gly Gln Asp Ser Thr Leu Gln Asp
 31                  36                  41                  46

acg cct cct cca gac cca gag ata ttc cgc caa cgc ttc agg cgc ttc      434
Thr Pro Pro Pro Asp Pro Glu Ile Phe Arg Gln Arg Phe Arg Arg Phe
 47                  52                  57                  62

tgt tac cag aac act ttt ggg ccc cga gag gct ctc agt cgg ctg aag      482
Cys Tyr Gln Asn Thr Phe Gly Pro Arg Glu Ala Leu Ser Arg Leu Lys
 63                  68                  73                  78

gaa ctt tgt cat cag tgg ctg cgg cca gaa ata aac acc aag gaa cag      530
Glu Leu Cys His Gln Trp Leu Arg Pro Glu Ile Asn Thr Lys Glu Gln
 79                  84                  89                  94

atc ctg gag ctt ctg gtg cta gag cag ttt ctt tcc atc ctg ccc aag      578
Ile Leu Glu Leu Leu Val Leu Glu Gln Phe Leu Ser Ile Leu Pro Lys
 95                 100                 105                 110

gag ctc cag gtc tgg ctg cag gaa tac cgc ccc gat agt gga gag gag      626
Glu Leu Gln Val Trp Leu Gln Glu Tyr Arg Pro Asp Ser Gly Glu Glu
111                 116                 121                 126

gcc gtg acc ctt cta gaa gac ttg gag ctt gat tta tca gga caa cag      674
Ala Val Thr Leu Leu Glu Asp Leu Glu Leu Asp Leu Ser Gly Gln Gln
127                 132                 137                 142

gtc cca ggt caa gtt cat gga cct gag atg ctc gca agg ggg atg gtg      722
Val Pro Gly Gln Val His Gly Pro Glu Met Leu Ala Arg Gly Met Val
143                 148                 153                 158

cct ctg gat cca gtt cag gag tcc tcg agc ttt gac ctt cat cac gag      770
Pro Leu Asp Pro Val Gln Glu Ser Ser Ser Phe Asp Leu His His Glu
159                 164                 169                 174

gcc acc cag tcc cac ttc aaa cat tcg tct cgg aaa ccc cgc ctc tta      818
Ala Thr Gln Ser His Phe Lys His Ser Ser Arg Lys Pro Arg Leu Leu
175                 180                 185                 190

cag tca cga gct ctt cct gct gcc cac att cct gca ccc cct cat gag      866
Gln Ser Arg Ala Leu Pro Ala Ala His Ile Pro Ala Pro Pro His Glu
191                 196                 201                 206

ggt agt ccc aga gac cag gcg atg gca tct gca cta ttc aca gcg gat      914
Gly Ser Pro Arg Asp Gln Ala Met Ala Ser Ala Leu Phe Thr Ala Asp
207                 212                 217                 222

tcc cag gca atg gtg aag atc gag gac atg gct gtg tcc ctc att ctg      962
Ser Gln Ala Met Val Lys Ile Glu Asp Met Ala Val Ser Leu Ile Leu
223                 228                 233                 238
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gag gaa tgg gga tgt cag aat ctg gct cgg agg aat ctc agt agg gac      1010
Glu Glu Trp Gly Cys Gln Asn Leu Ala Arg Arg Asn Leu Ser Arg Asp
239                 244                 249                 254

aac agg cag gag aat tat ggg agc gca ttt ccc cag ggt ggt gaa aac      1058
Asn Arg Gln Glu Asn Tyr Gly Ser Ala Phe Pro Gln Gly Gly Glu Asn
255                 260                 265                 270

agg aat gag aac gag gag tca acc tca aag gct gaa acc tcg gaa gat      1106
Arg Asn Glu Asn Glu Glu Ser Thr Ser Lys Ala Glu Thr Ser Glu Asp
271                 276                 281                 286

tca gca tca cgc ggg gag aca aca gga aga tcc cag aaa gag ttt gga      1154
Ser Ala Ser Arg Gly Glu Thr Thr Gly Arg Ser Gln Lys Glu Phe Gly
287                 292                 297                 302

gag aaa cgt gac cag gag ggc aaa aca gga gaa aga cag cag aaa aac      1202
Glu Lys Arg Asp Gln Glu Gly Lys Thr Gly Glu Arg Gln Gln Lys Asn
303                 308                 313                 318

cct gag gag aaa acc agg aaa gag aaa aga gat tca ggg cca gct ata      1250
Pro Glu Glu Lys Thr Arg Lys Glu Lys Arg Asp Ser Gly Pro Ala Ile
319                 324                 329                 334

gga aag gac aaa aaa acc atc aca gga gag aga ggt cca agg gag aag      1298
Gly Lys Asp Lys Lys Thr Ile Thr Gly Glu Arg Gly Pro Arg Glu Lys
335                 340                 345                 350

ggg aaa gga ttg gga aga agc ttc agt ctg agc tcc aac ttc acc acc      1346
Gly Lys Gly Leu Gly Arg Ser Phe Ser Leu Ser Ser Asn Phe Thr Thr
351                 356                 361                 366

cct gaa gaa gtt ccc acg gga aca aag tct cac aga tgt gat gaa tgt      1394
Pro Glu Glu Val Pro Thr Gly Thr Lys Ser His Arg Cys Asp Glu Cys
367                 372                 377                 382

ggt aaa tgc ttc acg aga agt tca agc ctt atc cgc cat aaa ata atc      1442
Gly Lys Cys Phe Thr Arg Ser Ser Ser Leu Ile Arg His Lys Ile Ile
383                 388                 393                 398

cac act gga gaa aag ccc tat gaa tgt agt gag tgt ggg aaa gcc ttc      1490
His Thr Gly Glu Lys Pro Tyr Glu Cys Ser Glu Cys Gly Lys Ala Phe
399                 404                 409                 414

agt ctt aac tcc aac ctt gtc ctg cat cag agg atc cac aca gga gag      1538
Ser Leu Asn Ser Asn Leu Val Leu His Gln Arg Ile His Thr Gly Glu
415                 420                 425                 430

aaa cct cat gaa tgt aac gag tgt ggc aag gcc ttc agc cac agt tcc      1586
Lys Pro His Glu Cys Asn Glu Cys Gly Lys Ala Phe Ser His Ser Ser
431                 436                 441                 446

aat ctc atc ctc cat cag cgc atc cac tct gga gag aaa cct tat gaa      1634
Asn Leu Ile Leu His Gln Arg Ile His Ser Gly Glu Lys Pro Tyr Glu
447                 452                 457                 462

tgt aat gag tgc ggg aag gcc ttc agc cag agc tcg gac ctc acc aag      1682
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10035720.010402

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Cys Asn Glu Cys Gly Lys Ala Phe Ser Gln Ser Ser Asp Leu Thr Lys
463                 468                 473                 478

cat cag aga att cac acg ggg gag aaa ccc tat gaa tgt agt gaa tgt      1730
His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Ser Glu Cys
479                 484                 489                 494

gga aaa gct ttc aac cga aac tca tac ctg att ttg cat cgg aga att      1778
Gly Lys Ala Phe Asn Arg Asn Ser Tyr Leu Ile Leu His Arg Arg Ile
495                 500                 505                 510

cac act cga gaa aag ccc tac aag tgc act aag tgt ggc aag gcc ttc      1826
His Thr Arg Glu Lys Pro Tyr Lys Cys Thr Lys Cys Gly Lys Ala Phe
511                 516                 521                 526

acc cgc agc tcc acc ctc act ctg cat cac aga atc cat gcc aga gag      1874
Thr Arg Ser Ser Thr Leu Thr Leu His His Arg Ile His Ala Arg Glu
527                 532                 537                 542

aga gcc tct gag tac agc cca gcc tcc ctt gat gca ttt ggc gcg ttc      1922
Arg Ala Ser Glu Tyr Ser Pro Ala Ser Leu Asp Ala Phe Gly Ala Phe
543                 548                 553                 558

ctg aaa agt tgt gtg taa aggaag aatttgccat caagccattt ccccctttg      1976
Leu Lys Ser Cys Val  *
559                 564

tttctaaaat tatttcagag atgtgtgctc ctggagggaa aaagaaatac agcctcaaca   2036

gattaaaaaa caaaagtcac acttaaggat ccttctagtc acatcagcag tgttctgcct   2096

ttatgtagta gttgggcata taatccttcc acacagcccc tgcagggaaa ggctaatctt   2156

acggataatc cacgtgagat ttccacacaa gagaaaagca cacgcatagt gaaatgtcag   2216

tcttttcagt aatgaggata cctttaaggc actcttggac tctcggcaac cacaacataa   2276

tagttgaaag atcaagattg gctccacgaa agtgatacgg aggttaggat gctacttgct   2336

gcaaacaagc cctactttgg ccaacatcct gcttatttct caaaaaagag ggacagtgaa   2396

aacaaaaacg acattgggac atgctgctca aggtagttat atatacgata agttgtatat   2456

atgatcactg gtagcctacc aaagctgtag aaatctagga ctgtgctaat cagtatcaaa   2516

ccaaagattt ctatctcttc ccgaaagaga gggtatgtgc accagtctac agttccaaag   2576

gactgcaaca aatgtagatg gttctgtcct catccctgag atcagttcta ctgaaatggc   2636

aacaacaact ccaaatacat ctctcccttc ttgaaatccc taaagcacta tcgcactcct   2696

aaatgcattt ctccacaagt tagcacttga ttgtatactg tcttttaatc cttcattgtt   2756

tcatgtatga agtttttaat caccccctaa cccccaaaaa agattcggtt gtcaagggat   2816

atatttctat ccctgccagc acagtgctgg acatagtgag tactgaacac ctaagaggca   2876
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ctcattcaga ctgacttcta caggacttct acgtgtgtga taaaagcctg tgaatcgtga   2936
gtccctgaaa tatggtagcc tggcccagct tctaaagagg accttcgtag ccacaaggca   2996
tgctaaacct ctagggtctg atgctgtttt tgttccaaat ataaacgaaa ggcactagtc   3056
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                                                    1

cag ggg tct caa cct ggc tca cct cca gca aca ttg agc ctc cag cac     103
Gln Gly Ser Gln Pro Gly Ser Pro Pro Ala Thr Leu Ser Leu Gln His
  4                   9                  14                  19

ctc ctg tct acc aag ccc cgt gcc agt cct gcc cag aac ccc cag gag     151
Leu Leu Ser Thr Lys Pro Arg Ala Ser Pro Ala Gln Asn Pro Gln Glu
 20                  25                  30                  35

ccc atg agc cct ctg act ctc cac acc ata ccc cag tcc atc ctc ctc     199
Pro Met Ser Pro Leu Thr Leu His Thr Ile Pro Gln Ser Ile Leu Leu
 36                  41                  46                  51

cag agc act cgg ccg cct gtc ctg ccc cag cca cgt gct gtc cgc ccc     247
Gln Ser Thr Arg Pro Pro Val Leu Pro Gln Pro Arg Ala Val Arg Pro
 52                  57                  62                  67

cga gaa gct cta tgt cat aaa tct taa ctcag atgggagagg gagcctcaga     299
Arg Glu Ala Leu Cys His Lys Ser  *
 68                  73

gtcacatagc cctgggccca aaccccagct cctccaccca agtactgatg gtcaggttct   359

tcagcctcag tttctgtagc tgtaagatgg ggagaatgat ctctgggagg gttaaatgtg   419

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agtcaagtag cttcccagtc ccgaacgccg cccgtcccca ccccgccgtg gccactagca     180

acgacctctg tgaagttgga gaggcggtaa cggaggcact ccccctgctg caccccgccg     240

tttctacggg gctcagaaac cagtttgttt gtttcgtcgg ggtagtgtcg acctgtctta     300

cgggcgtcgc ccgagacagg acggagtcaa acccgtggta tcaactgaag acgagtgtca     360

ggatgtcatt ttcaaaatgc gggatggtac ctctgcttta ttaagccccg taggaagact     420

gccacaccta gactgatgct tattagtcat caccgttatt cctactaacg tcctgtgtca     480

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gag aag tat gtt aga cta cag aag att gga gaa ggt tca ttt gga aaa       584
Glu Lys Tyr Val Arg Leu Gln Lys Ile Gly Glu Gly Ser Phe Gly Lys
  2                   7                  12                  17

gcc att ctt gtt aaa tct aca gaa gat ggc aga cag tat gtt atc aag       632
Ala Ile Leu Val Lys Ser Thr Glu Asp Gly Arg Gln Tyr Val Ile Lys
 18                  23                  28                  33

gaa att aac atc tca aga atg tcc agt aaa gaa aga gaa gaa tca agg       680
Glu Ile Asn Ile Ser Arg Met Ser Ser Lys Glu Arg Glu Glu Ser Arg
 34                  39                  44                  49

aga gaa gtt gca gta ttg gca aac atg aag cat cca aat att gtc cag       728
Arg Glu Val Ala Val Leu Ala Asn Met Lys His Pro Asn Ile Val Gln
 50                  55                  60                  65

tat aga gaa tca ttt gaa gaa aat ggc tct ctc tac ata gta atg gat       776
Tyr Arg Glu Ser Phe Glu Glu Asn Gly Ser Leu Tyr Ile Val Met Asp
 66                  71                  76                  81

tac tgt gag gga ggg gat ctg ttt aag cga ata aat gct cag aaa ggc       824
Tyr Cys Glu Gly Gly Asp Leu Phe Lys Arg Ile Asn Ala Gln Lys Gly
 82                  87                  92                  97

gtt ttg ttt caa gag gat cag att ttg gac tgg ttt gta cag ata tgt       872
Val Leu Phe Gln Glu Asp Gln Ile Leu Asp Trp Phe Val Gln Ile Cys
 98                 103                 108                 113

ttg gcc ctg aaa cat gta cat gat aga aaa att ctt cat cga gac att       920
Leu Ala Leu Lys His Val His Asp Arg Lys Ile Leu His Arg Asp Ile
114                 119                 124                 129

aaa tct cag aac ata ttt tta act aaa gat gga aca gta caa ctt gga       968
Lys Ser Gln Asn Ile Phe Leu Thr Lys Asp Gly Thr Val Gln Leu Gly
130                 135                 140                 145

gat ttt gga att gct aga gtt ctt aat agt act gta gag ctg gct cga      1016
Asp Phe Gly Ile Ala Arg Val Leu Asn Ser Thr Val Glu Leu Ala Arg
146                 151                 156                 161

act tgc ata ggg acc cca tac tac ttg tca cct gaa atc tgt gaa aac      1064
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Thr Cys Ile Gly Thr Pro Tyr Tyr Leu Ser Pro Glu Ile Cys Glu Asn
162                 167                 172                 177

aaa cct tac aat aat aaa agt gac att tgg gct ctg ggg tgt gtc ctt      1112
Lys Pro Tyr Asn Asn Lys Ser Asp Ile Trp Ala Leu Gly Cys Val Leu
178                 183                 188                 193

tat gag ctg tgt aca ctt aaa cat gct ttt gaa gct ggc agt atg aaa      1160
Tyr Glu Leu Cys Thr Leu Lys His Ala Phe Glu Ala Gly Ser Met Lys
194                 199                 204                 209

aac ctg gta ctg aag ata ata tct gga tct ttt cca cct gtg tct ttg      1208
Asn Leu Val Leu Lys Ile Ile Ser Gly Ser Phe Pro Pro Val Ser Leu
210                 215                 220                 225

cat tat tcc tat gat ctc cgc agt ttg gtg tct cag tta ttt aaa aga      1256
His Tyr Ser Tyr Asp Leu Arg Ser Leu Val Ser Gln Leu Phe Lys Arg
226                 231                 236                 241

aat cct agg gat aga cca tca gtc aac tcc ata ttg gag aaa ggt ttt      1304
Asn Pro Arg Asp Arg Pro Ser Val Asn Ser Ile Leu Glu Lys Gly Phe
242                 247                 252                 257

ata gcc aaa cgc att gaa aag ttt ctc tct cct cag ctt att gca gaa      1352
Ile Ala Lys Arg Ile Glu Lys Phe Leu Ser Pro Gln Leu Ile Ala Glu
258                 263                 268                 273

gaa ttt tgt cta aaa aca ttt tcg aag ttt gga tca cag cct ata cca      1400
Glu Phe Cys Leu Lys Thr Phe Ser Lys Phe Gly Ser Gln Pro Ile Pro
274                 279                 284                 289

gct aaa aga cca gct tca gga caa aac tcg att tct gtt atg cct gct      1448
Ala Lys Arg Pro Ala Ser Gly Gln Asn Ser Ile Ser Val Met Pro Ala
290                 295                 300                 305

cag aaa att aca aag cct gcc gct aaa tat gga ata cct tta gca tat      1496
Gln Lys Ile Thr Lys Pro Ala Ala Lys Tyr Gly Ile Pro Leu Ala Tyr
306                 311                 316                 321

aag aaa tat gga gat aaa aaa tta cac gaa aag aaa cca ctg caa aaa      1544
Lys Lys Tyr Gly Asp Lys Lys Leu His Glu Lys Lys Pro Leu Gln Lys
322                 327                 332                 337

cat aaa cag gcc cat caa act cca gag aag aga gtg aat act ggg gaa      1592
His Lys Gln Ala His Gln Thr Pro Glu Lys Arg Val Asn Thr Gly Glu
338                 343                 348                 353

gaa agg agg aaa ata tct gag gaa gca gca aga aag aga agg ctg gaa      1640
Glu Arg Arg Lys Ile Ser Glu Glu Ala Ala Arg Lys Arg Arg Leu Glu
354                 359                 364                 369

ttt att gaa aaa gaa aag aaa caa aag gat cag att att agt tta atg      1688
Phe Ile Glu Lys Glu Lys Lys Gln Lys Asp Gln Ile Ile Ser Leu Met
370                 375                 380                 385

aag gct gaa caa atg aaa agg caa gaa aag gaa agg ttg gaa aga ata      1736
Lys Ala Glu Gln Met Lys Arg Gln Glu Lys Glu Arg Leu Glu Arg Ile
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386                 391                 396                 401

aat agg gcc agg gaa caa gga tgg aga aat gtg cta agt gct ggt gga      1784
Asn Arg Ala Arg Glu Gln Gly Trp Arg Asn Val Leu Ser Ala Gly Gly
402                 407                 412                 417

agt ggt gaa gta aag gct cct ttt ctg ggc agt gga ggg act ata gct      1832
Ser Gly Glu Val Lys Ala Pro Phe Leu Gly Ser Gly Gly Thr Ile Ala
418                 423                 428                 433

cca tca tct ttt tct tct cga gga cag tat gaa cat tac cat gcc att      1880
Pro Ser Ser Phe Ser Ser Arg Gly Gln Tyr Glu His Tyr His Ala Ile
434                 439                 444                 449

ttt gac caa atg cag caa caa aga gca gaa gat aat gaa gct aaa tgg      1928
Phe Asp Gln Met Gln Gln Gln Arg Ala Glu Asp Asn Glu Ala Lys Trp
450                 455                 460                 465

aaa aga gaa ata tat ggt cga ggt ctt cca gaa agg caa aaa ggg cag      1976
Lys Arg Glu Ile Tyr Gly Arg Gly Leu Pro Glu Arg Gln Lys Gly Gln
466                 471                 476                 481

cta gct gta gaa aga gct aaa caa gta gaa gag ttc ctg cag cga aaa      2024
Leu Ala Val Glu Arg Ala Lys Gln Val Glu Glu Phe Leu Gln Arg Lys
482                 487                 492                 497

cgg gaa gct atg cag aat aaa gct cga gcc gaa gga cat atg gga atc      2072
Arg Glu Ala Met Gln Asn Lys Ala Arg Ala Glu Gly His Met Gly Ile
498                 503                 508                 513

ctg caa aac ctg gca gct atg tat gga ggc agg ccc agc tct tca aga      2120
Leu Gln Asn Leu Ala Ala Met Tyr Gly Gly Arg Pro Ser Ser Ser Arg
514                 519                 524                 529

gga ggg aag cca aga aac aaa gag gaa gag gtt tat ctg gca aga ctg      2168
Gly Gly Lys Pro Arg Asn Lys Glu Glu Glu Val Tyr Leu Ala Arg Leu
530                 535                 540                 545

agg caa ata aga cta cag aat ttc aat gag cgc caa cag att aaa gcc      2216
Arg Gln Ile Arg Leu Gln Asn Phe Asn Glu Arg Gln Gln Ile Lys Ala
546                 551                 556                 561

aaa ctt cgt ggt gaa aag aaa gaa gct aat cat tct gaa gga caa gaa      2264
Lys Leu Arg Gly Glu Lys Lys Glu Ala Asn His Ser Glu Gly Gln Glu
562                 567                 572                 577

gga agt gaa gag gct gac atg agg cgc aaa aaa atc gaa tca ctg aag      2312
Gly Ser Glu Glu Ala Asp Met Arg Arg Lys Lys Ile Glu Ser Leu Lys
578                 583                 588                 593

gcc cat gca aat gca cgt gct gct gta cta aaa gaa caa cta gaa cga      2360
Ala His Ala Asn Ala Arg Ala Ala Val Leu Lys Glu Gln Leu Glu Arg
594                 599                 604                 609

aag aga aag gag gct tat gag aga gaa aaa aaa gtg tgg gaa gag cat      2408
Lys Arg Lys Glu Ala Tyr Glu Arg Glu Lys Lys Val Trp Glu Glu His
610                 615                 620                 625
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ttg gtg gct aaa gga gtt aag agt tct gat gtt tct cca cct ttg gga      2456
Leu Val Ala Lys Gly Val Lys Ser Ser Asp Val Ser Pro Pro Leu Gly
626                 631                 636                 641

cag cat gaa aca ggt ggc tct cca tca aag caa cag atg aga tct gtt      2504
Gln His Glu Thr Gly Gly Ser Pro Ser Lys Gln Gln Met Arg Ser Val
642                 647                 652                 657

att tct gta act tca gct ttg aaa gaa gtt ggc gtg gac agt agt tta      2552
Ile Ser Val Thr Ser Ala Leu Lys Glu Val Gly Val Asp Ser Ser Leu
658                 663                 668                 673

act gat acc cgg gaa act tca gaa gag atg caa aag acc aac aat gct      2600
Thr Asp Thr Arg Glu Thr Ser Glu Glu Met Gln Lys Thr Asn Asn Ala
674                 679                 684                 689

att tca agt aag cga gaa ata ctt cgt aga tta aat gaa aat ctt aaa      2648
Ile Ser Ser Lys Arg Glu Ile Leu Arg Arg Leu Asn Glu Asn Leu Lys
690                 695                 700                 705

gct caa gaa gat gaa aaa gga aag cag aat ctc tct gat act ttt gag      2696
Ala Gln Glu Asp Glu Lys Gly Lys Gln Asn Leu Ser Asp Thr Phe Glu
706                 711                 716                 721

ata aat gtt cat gaa gat gcc aaa gag cat gaa aaa gaa aaa tca gtt      2744
Ile Asn Val His Glu Asp Ala Lys Glu His Glu Lys Glu Lys Ser Val
722                 727                 732                 737

tca tct gat cgc aag aag tgg gag gca gga ggt caa ctt gtg att cct      2792
Ser Ser Asp Arg Lys Lys Trp Glu Ala Gly Gly Gln Leu Val Ile Pro
738                 743                 748                 753

ctg gat gag tta aca cta gat aca tcc ttc tct aca act gaa aga cat      2840
Leu Asp Glu Leu Thr Leu Asp Thr Ser Phe Ser Thr Thr Glu Arg His
754                 759                 764                 769

aca gtg gga gaa gtt att aaa tta ggt cct aat gga tct cca aga aga      2888
Thr Val Gly Glu Val Ile Lys Leu Gly Pro Asn Gly Ser Pro Arg Arg
770                 775                 780                 785

gcc tgg ggg aaa agt ccg aca gat tct gtt cta aag ata ctt gga gaa      2936
Ala Trp Gly Lys Ser Pro Thr Asp Ser Val Leu Lys Ile Leu Gly Glu
786                 791                 796                 801

gct gaa cta caa ctt cag aca gaa cta tta gaa aat aca act att aga      2984
Ala Glu Leu Gln Leu Gln Thr Glu Leu Leu Glu Asn Thr Thr Ile Arg
802                 807                 812                 817

agt gag att tct ccc gaa ggg gaa aag tac aaa ccc tta att act gga      3032
Ser Glu Ile Ser Pro Glu Gly Glu Lys Tyr Lys Pro Leu Ile Thr Gly
818                 823                 828                 833

gaa aaa aaa gta caa tgt att tca cat gaa ata aac cca tca gct att      3080
Glu Lys Lys Val Gln Cys Ile Ser His Glu Ile Asn Pro Ser Ala Ile
834                 839                 844                 849
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Val Asp Ser Pro Val Glu Thr Lys Ser Pro Glu Phe Ser Glu Ala Ser
850                 855                 860                 865

cca cag atg tca ttg aaa ctg gaa gga aat tta gaa gaa cct gat gat      3176
Pro Gln Met Ser Leu Lys Leu Glu Gly Asn Leu Glu Glu Pro Asp Asp
866                 871                 876                 881

ttg gaa aca gaa att cta caa gag cca agt gga aca aac aaa gat gag      3224
Leu Glu Thr Glu Ile Leu Gln Glu Pro Ser Gly Thr Asn Lys Asp Glu
882                 887                 892                 897

agc ttg cca tgc act att act gat gtg tgg att agt gag gaa aaa gaa      3272
Ser Leu Pro Cys Thr Ile Thr Asp Val Trp Ile Ser Glu Glu Lys Glu
898                 903                 908                 913

aca aag gaa act cag tcg gca gat agg atc acc att cag gaa aat gaa      3320
Thr Lys Glu Thr Gln Ser Ala Asp Arg Ile Thr Ile Gln Glu Asn Glu
914                 919                 924                 929

gtt tct gaa gat gga gtc tcg agt act gtg gac caa ctt agt gac att      3368
Val Ser Glu Asp Gly Val Ser Ser Thr Val Asp Gln Leu Ser Asp Ile
930                 935                 940                 945

cat ata gag cct gga acc aat gat tct cag cac tct aaa tgt gat gta      3416
His Ile Glu Pro Gly Thr Asn Asp Ser Gln His Ser Lys Cys Asp Val
946                 951                 956                 961

gat aag tct gtg caa ccg gaa cca ttt ttc cat aag gtg gtt cat tct      3464
Asp Lys Ser Val Gln Pro Glu Pro Phe Phe His Lys Val Val His Ser
962                 967                 972                 977

gaa cac ttg aac tta gtc cct caa gtt caa tca gtt cag tgt tca cca      3512
Glu His Leu Asn Leu Val Pro Gln Val Gln Ser Val Gln Cys Ser Pro
978                 983                 988                 993

gaa gaa tcc ttt gca ttt cga tct cac tcg cat tta cca cca aaa aat      3560
Glu Glu Ser Phe Ala Phe Arg Ser His Ser His Leu Pro Pro Lys Asn
994                 999                 1004                1009

aaa aac aag aat tcc ttg ctg att gga ctt tca act ggt ctg ttt gat      3608
Lys Asn Lys Asn Ser Leu Leu Ile Gly Leu Ser Thr Gly Leu Phe Asp
1010                1015                1020                1025

gca aac aac cca aag atg tta agg aca tgt tca ctt cca gat ctc tca      3656
Ala Asn Asn Pro Lys Met Leu Arg Thr Cys Ser Leu Pro Asp Leu Ser
1026                1031                1036                1041

aag ctg ttc aga acc ctt atg gat gtt ccc acc gta gga gat gtt cgt      3704
Lys Leu Phe Arg Thr Leu Met Asp Val Pro Thr Val Gly Asp Val Arg
1042                1047                1052                1057

caa gac aat ctt gaa ata gat gaa att aaa|gat gaa aac att aaa gaa      3752
Gln Asp Asn Leu Glu Ile Asp Glu Ile Lys Asp Glu Asn Ile Lys Glu
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gga cct tct gat tct gaa gac att gtg ttt gaa gaa act gac aca gat      3800
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Leu Gln Glu Leu Gln Ala Ser Met Glu Gln Leu Leu Arg Glu Gln Pro
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ggt gaa gaa tac agt gaa gaa gaa gag tca gtc ttg aag aac agt gat      3896
Gly Glu Glu Tyr Ser Glu Glu Glu Glu Ser Val Leu Lys Asn Ser Asp
1106                1111                1116                1121

gtg gag cca act gca aat ggg aca gat gtg gca gat gaa gat gac aat      3944
Val Glu Pro Thr Ala Asn Gly Thr Asp Val Ala Asp Glu Asp Asp Asn
1122                1127                1132                1137

ccc agc agt gaa agt gcc ctg aac gaa gaa tgg cac tca gat aac agt      3992
Pro Ser Ser Glu Ser Ala Leu Asn Glu Glu Trp His Ser Asp Asn Ser
1138                1143                1148                1153

gat ggt gaa att gct agt gaa tgt gaa tgc gat agt gtc ttt aac cat      4040
Asp Gly Glu Ile Ala Ser Glu Cys Glu Cys Asp Ser Val Phe Asn His
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tta gag gaa ctg aga ctt cat ctg gag cag gaa atg ggc ttt gaa aaa      4088
Leu Glu Glu Leu Arg Leu His Leu Glu Gln Glu Met Gly Phe Glu Lys
1170                1175                1180                1185

ttc ttt gag gtt tat gag aaa ata aag gct att cat gaa gat gaa gat      4136
Phe Phe Glu Val Tyr Glu Lys Ile Lys Ala Ile His Glu Asp Glu Asp
1186                1191                1196                1201

gaa aat att gaa att tgt tca aaa ata gtt caa aat att ttg gga aat      4184
Glu Asn Ile Glu Ile Cys Ser Lys Ile Val Gln Asn Ile Leu Gly Asn
1202                1207                1212                1217

gaa cat cag cat ctt tat gcc aag att ctt cat tta gtc atg gca gat      4232
Glu His Gln His Leu Tyr Ala Lys Ile Leu His Leu Val Met Ala Asp
1218                1223                1228                1233

gga gcc tac caa gaa gat aat gat gaa taa t cctcaaaatg tttttaatc      4283
Gly Ala Tyr Gln Glu Asp Asn Asp Glu  *
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ctgagttttt taaatgtcta gcatatctgt aaagatgcct tagaaaaaga atc    atg      536
                                                              Met
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gag aag tat gtt aga cta cag aag att gga gaa ggt tca ttt gga aaa      584
Glu Lys Tyr Val Arg Leu Gln Lys Ile Gly Glu Gly Ser Phe Gly Lys
  2                 7                  12                  17

gcc att ctt gtt aaa tct aca gaa gat ggc aga cag tat gtt atc aag      632
Ala Ile Leu Val Lys Ser Thr Glu Asp Gly Arg Gln Tyr Val Ile Lys
 18                23                  28                  33

gaa att aac atc tca aga atg tcc agt aaa gaa aga gaa gaa tca agg      680
Glu Ile Asn Ile Ser Arg Met Ser Ser Lys Glu Arg Glu Glu Ser Arg
 34                39                  44                  49

aga gaa gtt gca gta ttg gca aac atg aag cat cca aat att gtc cag      728
Arg Glu Val Ala Val Leu Ala Asn Met Lys His Pro Asn Ile Val Gln
 50                55                  60                  65

tat aga gaa tca ttt gaa gaa aat ggc tct ctc tac ata gta atg gat      776
Tyr Arg Glu Ser Phe Glu Glu Asn Gly Ser Leu Tyr Ile Val Met Asp
 66                71                  76                  81

tac tgt gag gga ggg gat ctg ttt aag cga ata aat gct cag aaa ggc      824
Tyr Cys Glu Gly Gly Asp Leu Phe Lys Arg Ile Asn Ala Gln Lys Gly
 82                87                  92                  97

gtt ttg ttt caa gag gat cag att ttg gac tgg ttt gta cag ata tgt      872
Val Leu Phe Gln Glu Asp Gln Ile Leu Asp Trp Phe Val Gln Ile Cys
 98               103                 108                 113

ttg gcc ctg aaa cat gta cat gat aga aaa att ctt cat cga gac att      920
Leu Ala Leu Lys His Val His Asp Arg Lys Ile Leu His Arg Asp Ile
114               119                 124                 129

aaa tct cag aac ata ttt tta act aaa gat gga aca gta caa ctt gga      968
Lys Ser Gln Asn Ile Phe Leu Thr Lys Asp Gly Thr Val Gln Leu Gly
130               135                 140                 145

gat ttt gga att gct aga gtt ctt aat agt act gta gag ctg gct cga     1016
Asp Phe Gly Ile Ala Arg Val Leu Asn Ser Thr Val Glu Leu Ala Arg
146               151                 156                 161

act tgc ata ggg acc cca tac tac ttg tca cct gaa atc tgt gaa aac     1064
Thr Cys Ile Gly Thr Pro Tyr Tyr Leu Ser Pro Glu Ile Cys Glu Asn
162               167                 172                 177

aaa cct tac aat aat aaa agt gac att tgg gct ctg ggg tgt gtc ctt     1112
Lys Pro Tyr Asn Asn Lys Ser Asp Ile Trp Ala Leu Gly Cys Val Leu
178               183                 188                 193

tat gag ctg tgt aca ctt aaa cat gct ttt gaa gct ggc agt atg aaa     1160
Tyr Glu Leu Cys Thr Leu Lys His Ala Phe Glu Ala Gly Ser Met Lys
194               199                 204                 209

aac ctg gta ctg aag ata ata tct gga tct ttt cca cct gtg tct ttg     1208
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Asn Leu Val Leu Lys Ile Ile Ser Gly Ser Phe Pro Pro Val Ser Leu
210                 215                 220                 225

cat tat tcc tat gat ctc cgc agt ttg gtg tct cag tta ttt aaa aga      1256
His Tyr Ser Tyr Asp Leu Arg Ser Leu Val Ser Gln Leu Phe Lys Arg
226                 231                 236                 241

aat cct agg gat aga cca tca gtc aac tcc ata ttg gag aaa ggt ttt      1304
Asn Pro Arg Asp Arg Pro Ser Val Asn Ser Ile Leu Glu Lys Gly Phe
242                 247                 252                 257

ata gcc aaa cgc att gaa aag ttt ctc tct cct cag ctt att gca gaa      1352
Ile Ala Lys Arg Ile Glu Lys Phe Leu Ser Pro Gln Leu Ile Ala Glu
258                 263                 268                 273

gaa ttt tgt cta aaa aca ttt tcg aag ttt gga tca cag cct ata cca      1400
Glu Phe Cys Leu Lys Thr Phe Ser Lys Phe Gly Ser Gln Pro Ile Pro
274                 279                 284                 289

gct aaa aga cca gct tca gga caa aac tcg att tct gtt atg cct gct      1448
Ala Lys Arg Pro Ala Ser Gly Gln Asn Ser Ile Ser Val Met Pro Ala
290                 295                 300                 305

cag aaa att aca aag cct gcc gct aaa tat gga ata cct tta gca tat      1496
Gln Lys Ile Thr Lys Pro Ala Ala Lys Tyr Gly Ile Pro Leu Ala Tyr
306                 311                 316                 321

aag aaa tat gga gat aaa aaa tta cac gaa aag aaa cca ctg caa aaa      1544
Lys Lys Tyr Gly Asp Lys Lys Leu His Glu Lys Lys Pro Leu Gln Lys
322                 327                 332                 337

cat aaa cag gcc cat caa act cca gag aag aga gtg aat act ggg gaa      1592
His Lys Gln Ala His Gln Thr Pro Glu Lys Arg Val Asn Thr Gly Glu
338                 343                 348                 353

gaa agg agg aaa ata tct gag gaa gca gca aga aag aga agg ctg gaa      1640
Glu Arg Arg Lys Ile Ser Glu Glu Ala Ala Arg Lys Arg Arg Leu Glu
354                 359                 364                 369

ttt att gaa aaa gaa aag aaa caa aag gat cag att att agt tta atg      1688
Phe Ile Glu Lys Glu Lys Lys Gln Lys Asp Gln Ile Ile Ser Leu Met
370                 375                 380                 385

aag gct gaa caa atg aaa agg caa gaa aag gaa agg ttg gaa aga ata      1736
Lys Ala Glu Gln Met Lys Arg Gln Glu Lys Glu Arg Leu Glu Arg Ile
386                 391                 396                 401

aat agg gcc agg gaa caa gga tgg aga aat gtg cta agt gct ggt gga      1784
Asn Arg Ala Arg Glu Gln Gly Trp Arg Asn Val Leu Ser Ala Gly Gly
402                 407                 412                 417

agt ggt gaa gta aag gct cct ttt ctg ggc agt gga ggg act ata gct      1832
Ser Gly Glu Val Lys Ala Pro Phe Leu Gly Ser Gly Gly Thr Ile Ala
418                 423                 428                 433

cca tca tct ttt tct tct cga gga cag tat gaa cat tac cat gcc att      1880
Pro Ser Ser Phe Ser Ser Arg Gly Gln Tyr Glu His Tyr His Ala Ile
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434                 439                 444                 449

ttt gac caa atg cag caa caa aga gca gaa gat aat gaa gct aaa tgg      1928
Phe Asp Gln Met Gln Gln Gln Arg Ala Glu Asp Asn Glu Ala Lys Trp
450                 455                 460                 465

aaa aga gaa ata tat ggt cga ggt ctt cca gaa agg caa aaa ggg cag      1976
Lys Arg Glu Ile Tyr Gly Arg Gly Leu Pro Glu Arg Gln Lys Gly Gln
466                 471                 476                 481

cta gct gta gaa aga gct aaa caa gta gaa gag ttc ctg cag cga aaa      2024
Leu Ala Val Glu Arg Ala Lys Gln Val Glu Glu Phe Leu Gln Arg Lys
482                 487                 492                 497

cgg gaa gct atg cag aat aaa gct cga gcc gaa gga cat atg gtt tat      2072
Arg Glu Ala Met Gln Asn Lys Ala Arg Ala Glu Gly His Met Val Tyr
498                 503                 508                 513

ctg gca aga ctg agg caa ata aga cta cag aat ttc aat gag cgc caa      2120
Leu Ala Arg Leu Arg Gln Ile Arg Leu Gln Asn Phe Asn Glu Arg Gln
514                 519                 524                 529

cag att aaa gcc aaa ctt cgt ggt gaa aag aaa gaa gct aat cat tct      2168
Gln Ile Lys Ala Lys Leu Arg Gly Glu Lys Lys Glu Ala Asn His Ser
530                 535                 540                 545

gaa gga caa gaa gga agt gaa gag gct gac atg agg cgc aaa aaa atc      2216
Glu Gly Gln Glu Gly Ser Glu Glu Ala Asp Met Arg Arg Lys Lys Ile
546                 551                 556                 561

gaa tca ctg aag gcc cat gca aat gca cgt gct gct gta cta aaa gaa      2264
Glu Ser Leu Lys Ala His Ala Asn Ala Arg Ala Ala Val Leu Lys Glu
562                 567                 572                 577

caa cta gaa cga aag aga aag gag gct tat gag aga gaa aaa aaa gtg      2312
Gln Leu Glu Arg Lys Arg Lys Glu Ala Tyr Glu Arg Glu Lys Lys Val
578                 583                 588                 593

tgg gaa gag cat ttg gtg gct aaa gga gtt aag agt tct gat gtt tct      2360
Trp Glu Glu His Leu Val Ala Lys Gly Val Lys Ser Ser Asp Val Ser
594                 599                 604                 609

cca cct ttg gga cag cat gaa aca ggt ggc tct cca tca aag caa cag      2408
Pro Pro Leu Gly Gln His Glu Thr Gly Gly Ser Pro Ser Lys Gln Gln
610                 615                 620                 625

atg aga tct gtt att tct gta act tca gct ttg aaa gaa gtt ggc gtg      2456
Met Arg Ser Val Ile Ser Val Thr Ser Ala Leu Lys Glu Val Gly Val
626                 631                 636                 641

gac agt agt tta act gat acc cgg gaa act tca gaa gag atg caa aag      2504
Asp Ser Ser Leu Thr Asp Thr Arg Glu Thr Ser Glu Glu Met Gln Lys
642                 647                 652                 657

acc aac aat gct att tca agt aag cga gaa ata ctt cgt aga tta aat      2552
Thr Asn Asn Ala Ile Ser Ser Lys Arg Glu Ile Leu Arg Arg Leu Asn
658                 663                 668                 673
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gaa aat ctt aaa gct caa gaa gat gaa aaa gga aag cag aat ctc tct      2600
Glu Asn Leu Lys Ala Gln Glu Asp Glu Lys Gly Lys Gln Asn Leu Ser
674                 679                 684                 689

gat act ttt gag ata aat gtt cat gaa gat gcc aaa gag cat gaa aaa      2648
Asp Thr Phe Glu Ile Asn Val His Glu Asp Ala Lys Glu His Glu Lys
690                 695                 700                 705

gaa aaa tca gtt tca tct gat cgc aag aag tgg gag gca gga ggt caa      2696
Glu Lys Ser Val Ser Ser Asp Arg Lys Lys Trp Glu Ala Gly Gly Gln
706                 711                 716                 721

ctt gtg att cct ctg gat gag tta aca cta gat aca tcc ttc tct aca      2744
Leu Val Ile Pro Leu Asp Glu Leu Thr Leu Asp Thr Ser Phe Ser Thr
722                 727                 732                 737

act gaa aga cat aca gtg gga gaa gtt att aaa tta ggt cct aat gga      2792
Thr Glu Arg His Thr Val Gly Glu Val Ile Lys Leu Gly Pro Asn Gly
738                 743                 748                 753

tct cca aga aga gcc tgg ggg aaa agt ccg aca gat tct gtt cta aag      2840
Ser Pro Arg Arg Ala Trp Gly Lys Ser Pro Thr Asp Ser Val Leu Lys
754                 759                 764                 769

ata ctt gga gaa gct gaa cta caa ctt cag aca gaa cta tta gaa aat      2888
Ile Leu Gly Glu Ala Glu Leu Gln Leu Gln Thr Glu Leu Leu Glu Asn
770                 775                 780                 785

aca act att aga agt gag att tct ccc gaa ggg gaa aag tac aaa ccc      2936
Thr Thr Ile Arg Ser Glu Ile Ser Pro Glu Gly Glu Lys Tyr Lys Pro
786                 791                 796                 801

tta att act gga gaa aaa aaa gta caa tgt att tca cat gaa ata aac      2984
Leu Ile Thr Gly Glu Lys Lys Val Gln Cys Ile Ser His Glu Ile Asn
802                 807                 812                 817

cca tca gct att gtt gat tct cct gtt gag aca aaa agt ccc gag ttc      3032
Pro Ser Ala Ile Val Asp Ser Pro Val Glu Thr Lys Ser Pro Glu Phe
818                 823                 828                 833

agt gag gca tct cca cag atg tca ttg aaa ctg gaa gga aat tta gaa      3080
Ser Glu Ala Ser Pro Gln Met Ser Leu Lys Leu Glu Gly Asn Leu Glu
834                 839                 844                 849

gaa cct gat gat ttg gaa aca gaa att cta caa gag cca agt gga aca      3128
Glu Pro Asp Asp Leu Glu Thr Glu Ile Leu Gln Glu Pro Ser Gly Thr
850                 855                 860                 865

aac aaa gat gag agc ttg cca tgc act att act gat gtg tgg att agt      3176
Asn Lys Asp Glu Ser Leu Pro Cys Thr Ile Thr Asp Val Trp Ile Ser
866                 871                 876                 881

gag gaa aaa gaa aca aag gaa act cag tcg gca gat agg atc acc att      3224
Glu Glu Lys Glu Thr Lys Glu Thr Gln Ser Ala Asp Arg Ile Thr Ile
882                 887                 892                 897
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cag gaa aat gaa gtt tct gaa gat gga gtc tcg agt act gtg gac caa      3272
Gln Glu Asn Glu Val Ser Glu Asp Gly Val Ser Ser Thr Val Asp Gln
898                 903                 908                 913

ctt agt gac att cat ata gag cct gga acc aat gat tct cag cac tct      3320
Leu Ser Asp Ile His Ile Glu Pro Gly Thr Asn Asp Ser Gln His Ser
914                 919                 924                 929

aaa tgt gat gta gat aag tct gtg caa ccg gaa cca ttt ttc cat aag      3368
Lys Cys Asp Val Asp Lys Ser Val Gln Pro Glu Pro Phe Phe His Lys
930                 935                 940                 945

gtg gtt cat tct gaa cac ttg aac tta gtc cct caa gtt caa tca gtt      3416
Val Val His Ser Glu His Leu Asn Leu Val Pro Gln Val Gln Ser Val
946                 951                 956                 961

cag tgt tca cca gaa gaa tcc ttt gca ttt cga tct cac tcg cat tta      3464
Gln Cys Ser Pro Glu Glu Ser Phe Ala Phe Arg Ser His Ser His Leu
962                 967                 972                 977

cca cca aaa aat aaa aac aag aat tcc ttg ctg att gga ctt tca act      3512
Pro Pro Lys Asn Lys Asn Lys Asn Ser Leu Leu Ile Gly Leu Ser Thr
978                 983                 988                 993

ggt ctg ttt gat gca aac aac cca aag atg tta agg aca tgt tca ctt      3560
Gly Leu Phe Asp Ala Asn Asn Pro Lys Met Leu Arg Thr Cys Ser Leu
994                 999                 1004                1009

cca gat ctc tca aag ctg ttc aga acc ctt atg gat gtt ccc acc gta      3608
Pro Asp Leu Ser Lys Leu Phe Arg Thr Leu Met Asp Val Pro Thr Val
1010                1015                1020                1025

gga gat gtt cgt caa gac aat ctt gaa ata gat gaa att aaa gat gaa      3656
Gly Asp Val Arg Gln Asp Asn Leu Glu Ile Asp Glu Ile Lys Asp Glu
1026                1031                1036                1041

aac att aaa gaa gga cct tct gat tct gaa gac att gtg ttt gaa gaa      3704
Asn Ile Lys Glu Gly Pro Ser Asp Ser Glu Asp Ile Val Phe Glu Glu
1042                1047                1052                1057

act gac aca gat tta caa gag ctg cag gcc tcg atg gaa cag tta ctt      3752
Thr Asp Thr Asp Leu Gln Glu Leu Gln Ala Ser Met Glu Gln Leu Leu
1058                1063                1068                1073

agg gaa caa cct ggt gaa gaa tac agt gaa gaa gaa gag tca gtc ttg      3800
Arg Glu Gln Pro Gly Glu Glu Tyr Ser Glu Glu Glu Glu Ser Val Leu
1074                1079                1084                1089

aag aac agt gat gtg gag cca act gca aat ggg aca gat gtg gca gat      3848
Lys Asn Ser Asp Val Glu Pro Thr Ala Asn Gly Thr Asp Val Ala Asp
1090                1095                1100                1105

gaa gat gac aat ccc agc agt gaa agt gcc ctg aac gaa gaa tgg cac      3896
Glu Asp Asp Asn Pro Ser Ser Glu Ser Ala Leu Asn Glu Glu Trp His
1106                1111                1116                1121

tca gat aac agt gat ggt gaa att gct agt gaa tgt gaa tgc gat agt      3944
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 Ser Asp Asn Ser Asp Gly Glu Ile Ala Ser Glu Cys Glu Cys Asp Ser
1122                1127                1132                1137

 gtc ttt aac cat tta gag gaa ctg aga ctt cat ctg gag cag gaa atg      3992
 Val Phe Asn His Leu Glu Glu Leu Arg Leu His Leu Glu Gln Glu Met
1138                1143                1148                1153

 ggc ttt gaa aaa ttc ttt gag gtt tat gag aaa ata aag gct att cat      4040
 Gly Phe Glu Lys Phe Phe Glu Val Tyr Glu Lys Ile Lys Ala Ile His
1154                1159                1164                1169

 gaa gat gaa gat gaa aat att gaa att tgt tca aaa ata gtt caa aat      4088
 Glu Asp Glu Asp Glu Asn Ile Glu Ile Cys Ser Lys Ile Val Gln Asn
1170                1175                1180                1185

 att ttg gga aat gaa cat cag cat ctt tat gcc aag att ctt cat tta      4136
 Ile Leu Gly Asn Glu His Gln His Leu Tyr Ala Lys Ile Leu His Leu
1186                1191                1196                1201

 gtc atg gca gat gga gcc tac caa gaa gat aat gat gaa taa tcctcaa      4185
 Val Met Ala Asp Gly Ala Tyr Gln Glu Asp Asn Asp Glu  *
1202                1207                1212

aatgtttttt aatcctcaac tatatgaaag catttgaatt tggcttatca gaataacaag    4245

cttcagtggg aaatacagca attatttatt taaaaatcca gatttaagat ggactttctt    4305

attgcatgaa aaagatggag aaacatgcca tttttcaatg aagattctaa tattttatct    4365

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aaccaaagca taggaaacat tgacccagaa cctgacttaa tggttttgaa gatttactat    4485

gcaatagggt aactttgagt ttcagcaaat gtctttaggt tgaaggaatt acctatgtca    4545

tgaaggacct gtctgtggtt tttcaatgga gtctttaagc atgatctttt ttctgtctag    4605

tacttgtttt cattctggcc agcagttcta cattaaatca ccttgtcaag ggctctgttt    4665

acatctacac attttgaaga tgaaattttt agccttaaag tttatattct caagtccttt    4725

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gaaagatttg attatgaaag aatagcaaaa ttatatttct tgacatataa aaagttggtt    4845

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1 5 10

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Ser Arg Ala Ser Cys Gln Asp Thr Phe Thr Ala Ala Val Tyr Glu His
17 22 27 32

gca gcg ata ttg ccc aat gcc acc cta aca cca gtg tct cgt gag gag 144
Ala Ala Ile Leu Pro Asn Ala Thr Leu Thr Pro Val Ser Arg Glu Glu
33 38 43 48

gct ttg gca tta atg aat cgg aat ctg gac att ttg gaa gga gcg atc 192
Ala Leu Ala Leu Met Asn Arg Asn Leu Asp Ile Leu Glu Gly Ala Ile
49 54 59 64

aca tca gca gca gat cag ggt gcg cat att att gtg act cca gaa gat 240
Thr Ser Ala Ala Asp Gln Gly Ala His Ile Ile Val Thr Pro Glu Asp
65 70 75 80

gct att tat ggc tgg aac ttc aac agg gac tct ctc tac cca tat ttg 288
Ala Ile Tyr Gly Trp Asn Phe Asn Arg Asp Ser Leu Tyr Pro Tyr Leu
81 86 91 96

gag gac atc cca gac cct gaa gta aac tgg atc ccc tgt aat aat cgt 336
Glu Asp Ile Pro Asp Pro Glu Val Asn Trp Ile Pro Cys Asn Asn Arg
97 102 107 112

aac agg gac atg gat aaa gct gga aac cat cat tct cag caa act aac 384
Asn Arg Asp Met Asp Lys Ala Gly Asn His His Ser Gln Gln Thr Asn
113 118 123 128

aca gga aca gaa aac aaa aca ctg cat gtt ctc gct cat aag tgg gag 432
Thr Gly Thr Glu Asn Lys Thr Leu His Val Leu Ala His Lys Trp Glu

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129                 134                 139                 144

ttg aac aac gag aat aca tgg aca caa gga ggg gaa cat cac aca ccg        480
Leu Asn Asn Glu Asn Thr Trp Thr Gln Gly Gly Glu His His Thr Pro
145                 150                 155                 160

ggg cct gtc ggg gag tcg ggg gct aag gga ggg atg gca tta gga gaa        528
Gly Pro Val Gly Glu Ser Gly Ala Lys Gly Gly Met Ala Leu Gly Glu
161                 166                 171                 176

ata cct aat gta gat gat ggg ttg atc tta gag aaa agc ttt cag ttt        576
Ile Pro Asn Val Asp Asp Gly Leu Ile Leu Glu Lys Ser Phe Gln Phe
177                 182                 187                 192

tcc ctc att cag tat gat acc agc cat ggg tct gtc ata aat ggc tat        624
Ser Leu Ile Gln Tyr Asp Thr Ser His Gly Ser Val Ile Asn Gly Tyr
193                 198                 203                 208

tat tgt gtt gag acc cca gta caa gaa aga ctc agc tgc ctg gcc aag        672
Tyr Cys Val Glu Thr Pro Val Gln Glu Arg Leu Ser Cys Leu Ala Lys
209                 214                 219                 224

aac aac tct atc tat gtt gtg gca aat att ggg gac aag aag cca tgc        720
Asn Asn Ser Ile Tyr Val Val Ala Asn Ile Gly Asp Lys Lys Pro Cys
225                 230                 235                 240

gat acc agt gat cct cag tgt ccc cct gat ggc cgt tac caa tac aac        768
Asp Thr Ser Asp Pro Gln Cys Pro Pro Asp Gly Arg Tyr Gln Tyr Asn
241                 246                 251                 256

act gat gtg gta ttt gat tct caa gga aaa ctg gtg gca cgc tac cat        816
Thr Asp Val Val Phe Asp Ser Gln Gly Lys Leu Val Ala Arg Tyr His
257                 262                 267                 272

aag caa aac ctt ttc atg ggt gaa aat caa ttc aat gta ccc aag gag        864
Lys Gln Asn Leu Phe Met Gly Glu Asn Gln Phe Asn Val Pro Lys Glu
273                 278                 283                 288

cct gag att gtg act ttc aat acc acc ttt gga agt ttt ggc att ttc        912
Pro Glu Ile Val Thr Phe Asn Thr Thr Phe Gly Ser Phe Gly Ile Phe
289                 294                 299                 304

aca tgc ttt gat ata ctc ttc cat gat cct gct gtt acc ttg gtg aaa        960
Thr Cys Phe Asp Ile Leu Phe His Asp Pro Ala Val Thr Leu Val Lys
305                 310                 315                 320

gat ttc cac gtg gac acc ata gta ttc cca aca gct tgg atg aat gtt       1008
Asp Phe His Val Asp Thr Ile Val Phe Pro Thr Ala Trp Met Asn Val
321                 326                 331                 336

ttg cca cat ttg tca gct gtt gaa ttc cac tca gct tgg gct atg ggc       1056
Leu Pro His Leu Ser Ala Val Glu Phe His Ser Ala Trp Ala Met Gly
337                 342                 347                 352

atg agg gtc aat ttc ctt gca tcc aac ata cat tac ccc tca aag aaa       1104
Met Arg Val Asn Phe Leu Ala Ser Asn Ile His Tyr Pro Ser Lys Lys
353                 358                 363                 368
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atg aca gga agt ggc atc tat gca ccc aat tct tca aga gca ttt cat      1152
Met Thr Gly Ser Gly Ile Tyr Ala Pro Asn Ser Ser Arg Ala Phe His
369                 374                 379                 384

tat gat atg aag aca gaa gag gga aaa ctc ctc ctc tcg caa ctg gat      1200
Tyr Asp Met Lys Thr Glu Glu Gly Lys Leu Leu Leu Ser Gln Leu Asp
385                 390                 395                 400

tcc cac cca tcc cat tct gca gtg gtg aac tgg act tcc tat gcc agc      1248
Ser His Pro Ser His Ser Ala Val Val Asn Trp Thr Ser Tyr Ala Ser
401                 406                 411                 416

agt ata gaa gcg ctc tca tca gga aac aag gaa ttt aaa ggc act gtc      1296
Ser Ile Glu Ala Leu Ser Ser Gly Asn Lys Glu Phe Lys Gly Thr Val
417                 422                 427                 432

ttt ttc gat gaa ttc act ttt gtg aag ctc aca gga gtt gca gga aat      1344
Phe Phe Asp Glu Phe Thr Phe Val Lys Leu Thr Gly Val Ala Gly Asn
433                 438                 443                 448

tat aca gtt tgt cag aaa gat ctc tgc tgt cat tta agc tac aaa atg      1392
Tyr Thr Val Cys Gln Lys Asp Leu Cys Cys His Leu Ser Tyr Lys Met
449                 454                 459                 464

tct gag aac ata cca aat gaa gtg tac gct cta ggg gca ttt gac gga      1440
Ser Glu Asn Ile Pro Asn Glu Val Tyr Ala Leu Gly Ala Phe Asp Gly
465                 470                 475                 480

ctg cac act gtg gaa ggg cgc tat tat cta cag att tgt acc ctg ttg      1488
Leu His Thr Val Glu Gly Arg Tyr Tyr Leu Gln Ile Cys Thr Leu Leu
481                 486                 491                 496

aaa tgt aaa acg act aat tta aac act tgc ggt gac tca gct gaa aca      1536
Lys Cys Lys Thr Thr Asn Leu Asn Thr Cys Gly Asp Ser Ala Glu Thr
497                 502                 507                 512

gct tct acc agg ttt gaa atg ttc tcc ctc agt ggc act ttc gga acc      1584
Ala Ser Thr Arg Phe Glu Met Phe Ser Leu Ser Gly Thr Phe Gly Thr
513                 518                 523                 528

cag tat gtc ttt cct gag gtg ttg ctg agt gaa aat cag ctt gca cct      1632
Gln Tyr Val Phe Pro Glu Val Leu Leu Ser Glu Asn Gln Leu Ala Pro
529                 534                 539                 544

gga gaa ttt cag tgc tgt gat gat gga caa tta cat agt acc gat aac      1680
Gly Glu Phe Gln Cys Cys Asp Asp Gly Gln Leu His Ser Thr Asp Asn
545                 550                 555                 560

agc cat gca ctg tgc aaa gca tgc cct tct gca cag gag agc aag gca      1728
Ser His Ala Leu Cys Lys Ala Cys Pro Ser Ala Gln Glu Ser Lys Ala
561                 566                 571                 576

ctt gca gta gtg atc tat gcc agc aaa aca tca ttt tga                  1767
Leu Ala Val Val Ile Tyr Ala Ser Lys Thr Ser Phe  *
577                 582                 587
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Met Ala Gln Arg Thr Gly Leu Glu Asp Pro Glu Arg Tyr Leu Phe Val
1               5                   10

gac agg gct gtc atc tac aac cct gcc act caa gct gat tgg aca gct       96
Asp Arg Ala Val Ile Tyr Asn Pro Ala Thr Gln Ala Asp Trp Thr Ala
17                  22                  27                  32

aaa aag cta gtg tgg att cca tca gaa cgc cat ggt ttt gag gca gct      144
Lys Lys Leu Val Trp Ile Pro Ser Glu Arg His Gly Phe Glu Ala Ala
33                  38                  43                  48

agt atc aaa gaa gaa cgg gga gat gaa gtt atg gtg gag ttg gca gag      192
Ser Ile Lys Glu Glu Arg Gly Asp Glu Val Met Val Glu Leu Ala Glu
49                  54                  59                  64

aat gga aag aaa gca atg gtc aac aaa gat gat att cag aag atg aac      240
Asn Gly Lys Lys Ala Met Val Asn Lys Asp Asp Ile Gln Lys Met Asn
65                  70                  75                  80

cca cct aag ttt tcc aag gtg gag gat atg gca gaa ttg aca tgc ttg      288
Pro Pro Lys Phe Ser Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu
81                  86                  91                  96

aat gaa gct tcc gtt tta cat aat ctg aag gat cgc tac tat tca gga      336
Asn Glu Ala Ser Val Leu His Asn Leu Lys Asp Arg Tyr Tyr Ser Gly
97                  102                 107                 112

cta atc tat act tat tct gga ctc ttc tgt gta gtt ata aac cct tac      384
Leu Ile Tyr Thr Tyr Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr
113                 118                 123                 128

aag aat ctt cca att tac tct gag aat att att gaa atg tac aga ggg      432
Lys Asn Leu Pro Ile Tyr Ser Glu Asn Ile Ile Glu Met Tyr Arg Gly
129                 134                 139                 144

aag aag cgt cat gag atg cct cca cac atc tat gct ata tct gaa tct      480
Lys Lys Arg His Glu Met Pro Pro His Ile Tyr Ala Ile Ser Glu Ser
145                 150                 155                 160

gct tac aga tgc atg ctt caa gat cgt gag gac cag tca att ctt tgc      528
Ala Tyr Arg Cys Met Leu Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys
161                 166                 171                 176
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acg ggt gag tca ggt gct ggg aag aca gaa aat aca aag aaa gtt att      576
Thr Gly Glu Ser Gly Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile
177                 182                 187                 192

cag tac ctt gcc cat gtt gct tct tca cat aaa gga aga aag gac cat      624
Gln Tyr Leu Ala His Val Ala Ser Ser His Lys Gly Arg Lys Asp His
193                 198                 203                 208

aat att cct ggg gaa ctt gaa cgg cag ctt ttg caa gca aat cca att      672
Asn Ile Pro Gly Glu Leu Glu Arg Gln Leu Leu Gln Ala Asn Pro Ile
209                 214                 219                 224

ctg gaa tca ttt gga aat gcg aag act gtg aaa aat gat aac tca tct      720
Leu Glu Ser Phe Gly Asn Ala Lys Thr Val Lys Asn Asp Asn Ser Ser
225                 230                 235                 240

cgt ttt ggc aaa ttt att cgg atc aac ttt gat gta act ggc tat atc      768
Arg Phe Gly Lys Phe Ile Arg Ile Asn Phe Asp Val Thr Gly Tyr Ile
241                 246                 251                 256

gtt ggg gcc aac att gaa aca tac ctt ctg gaa aag tct cgt gct gtt      816
Val Gly Ala Asn Ile Glu Thr Tyr Leu Leu Glu Lys Ser Arg Ala Val
257                 262                 267                 272

cgt caa gca aaa gat gaa cgt act ttt cat atc ttt tac cag ttg tta      864
Arg Gln Ala Lys Asp Glu Arg Thr Phe His Ile Phe Tyr Gln Leu Leu
273                 278                 283                 288

tct gga gca gga gaa cac cta aag tct gat ttg ctt ctt gaa gga ttt      912
Ser Gly Ala Gly Glu His Leu Lys Ser Asp Leu Leu Leu Glu Gly Phe
289                 294                 299                 304

aat aac tac agg ttt ctc tcc aat ggc tat att cct att ccg gga cag      960
Asn Asn Tyr Arg Phe Leu Ser Asn Gly Tyr Ile Pro Ile Pro Gly Gln
305                 310                 315                 320

caa gac aaa gat aat ttc cag gag acc atg gaa gca atg cac ata atg     1008
Gln Asp Lys Asp Asn Phe Gln Glu Thr Met Glu Ala Met His Ile Met
321                 326                 331                 336

ggc ttc tcc cat gaa gag att ctg tca atg ctt aaa gta gta tct tca     1056
Gly Phe Ser His Glu Glu Ile Leu Ser Met Leu Lys Val Val Ser Ser
337                 342                 347                 352

gtg cta cag ttt gga aat att tct ttc aaa aag gag aga aat act gat     1104
Val Leu Gln Phe Gly Asn Ile Ser Phe Lys Lys Glu Arg Asn Thr Asp
353                 358                 363                 368

caa gct tcc atg cca gaa aat aca gtt gcg cag aag ctc tgc cat ctt     1152
Gln Ala Ser Met Pro Glu Asn Thr Val Ala Gln Lys Leu Cys His Leu
369                 374                 379                 384

ctt ggg atg aat gtg atg gag ttt act cgg gcc atc ctg act ccc cgg     1200
Leu Gly Met Asn Val Met Glu Phe Thr Arg Ala Ile Leu Thr Pro Arg
385                 390                 395                 400
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atc aag gtc ggc cga gac tat gtg caa aaa gcc cag acc aaa gaa cag      1248
Ile Lys Val Gly Arg Asp Tyr Val Gln Lys Ala Gln Thr Lys Glu Gln
401                 406                 411                 416

gca gat ttt gca gta gaa gca ttg gca aaa gct acc tat gag cgg ctc      1296
Ala Asp Phe Ala Val Glu Ala Leu Ala Lys Ala Thr Tyr Glu Arg Leu
417                 422                 427                 432

ttt cgc tgg ctc gtt cat cgc atc aat aaa gct ctg gat agg acc aaa      1344
Phe Arg Trp Leu Val His Arg Ile Asn Lys Ala Leu Asp Arg Thr Lys
433                 438                 443                 448

cgt cag gga gca tct ttc att gga atc ctg gat att gct gga ttt gaa      1392
Arg Gln Gly Ala Ser Phe Ile Gly Ile Leu Asp Ile Ala Gly Phe Glu
449                 454                 459                 464

att ttt gag ctg aac tcc ttt gaa caa ctt tgc atc aac tac acc aat      1440
Ile Phe Glu Leu Asn Ser Phe Glu Gln Leu Cys Ile Asn Tyr Thr Asn
465                 470                 475                 480

gag aag ctg cag cag ctg ttc aac cac acc atg ttt atc cta gaa caa      1488
Glu Lys Leu Gln Gln Leu Phe Asn His Thr Met Phe Ile Leu Glu Gln
481                 486                 491                 496

gag gaa tac cag cgc gaa ggc atc gag tgg aac ttc atc gat ttc ggg      1536
Glu Glu Tyr Gln Arg Glu Gly Ile Glu Trp Asn Phe Ile Asp Phe Gly
497                 502                 507                 512

ctg gat ctg cag cca tgc atc gac cta ata gag aga cct gcg aac cct      1584
Leu Asp Leu Gln Pro Cys Ile Asp Leu Ile Glu Arg Pro Ala Asn Pro
513                 518                 523                 528

cct ggt gta ctg gcc ctt ttg gat gaa gaa tgc tgg ttc cct aaa gcc      1632
Pro Gly Val Leu Ala Leu Leu Asp Glu Glu Cys Trp Phe Pro Lys Ala
529                 534                 539                 544

aca gat aaa acc ttt gtt gaa aaa ctg gtt caa gag caa ggt tcc cac      1680
Thr Asp Lys Thr Phe Val Glu Lys Leu Val Gln Glu Gln Gly Ser His
545                 550                 555                 560

tcc aag ttt cag aaa cct cga caa tta aaa gac aaa gct gat ttt tgc      1728
Ser Lys Phe Gln Lys Pro Arg Gln Leu Lys Asp Lys Ala Asp Phe Cys
561                 566                 571                 576

att ata cat tat gca ggg aag gtg gac tat aag gca gat gag tgg ctg      1776
Ile Ile His Tyr Ala Gly Lys Val Asp Tyr Lys Ala Asp Glu Trp Leu
577                 582                 587                 592

atg aag aat atg gac ccc ctg aat gac aac gtg gcc acc ctt ttg cac      1824
Met Lys Asn Met Asp Pro Leu Asn Asp Asn Val Ala Thr Leu Leu His
593                 598                 603                 608

cag tca tca gac aga ttt gtg gca gag ctt tgg aaa gat gtg gac cgt      1872
Gln Ser Ser Asp Arg Phe Val Ala Glu Leu Trp Lys Asp Val Asp Arg
609                 614                 619                 624

atc gtg ggt ctg gat caa gtc act ggt atg act gag aca gct ttt ggc      1920
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Ile Val Gly Leu Asp Gln Val Thr Gly Met Thr Glu Thr Ala Phe Gly
625 630 635 640

tcc gca tat aaa acc aag aag ggc atg ttt cgt acc gtt ggg caa ctc 1968
Ser Ala Tyr Lys Thr Lys Lys Gly Met Phe Arg Thr Val Gly Gln Leu
641 646 651 656

tac aaa gaa tct ctc acc aag ctg atg gca act ctc cga aac acc aac 2016
Tyr Lys Glu Ser Leu Thr Lys Leu Met Ala Thr Leu Arg Asn Thr Asn
657 662 667 672

cct aac ttt gtt cgt tgt atc att cca aat cac gag aag agg gct gga 2064
Pro Asn Phe Val Arg Cys Ile Ile Pro Asn His Glu Lys Arg Ala Gly
673 678 683 688

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Lys Leu Asp Pro His Leu Val Leu Asp Gln Leu Arg Cys Asn Gly Val
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ctg gaa ggg atc cga atc tgt cgc cag ggc ttc cct aac cga ata gtt 2160
Leu Glu Gly Ile Arg Ile Cys Arg Gln Gly Phe Pro Asn Arg Ile Val
705 710 715 720

ttc caa gaa ttc aga cag aga tat gag atc cta act cca aat gct att 2208
Phe Gln Glu Phe Arg Gln Arg Tyr Glu Ile Leu Thr Pro Asn Ala Ile
721 726 731 736

cct aaa ggt ttt atg gat ggt aaa cag gcc tgt gaa cga atg atc cgg 2256
Pro Lys Gly Phe Met Asp Gly Lys Gln Ala Cys Glu Arg Met Ile Arg
737 742 747 752

gct tta gaa ttg gac cca aac ttg tac aga att gga cag agc aag ata 2304
Ala Leu Glu Leu Asp Pro Asn Leu Tyr Arg Ile Gly Gln Ser Lys Ile
753 758 763 768

ttt ttc aga gct gga gtt ctg gca cac tta gag gaa gaa aga gat tta 2352
Phe Phe Arg Ala Gly Val Leu Ala His Leu Glu Glu Glu Arg Asp Leu
769 774 779 784

aaa atc acc gat atc att atc ttc ttc cag gcc gtt tgc aga ggt tac 2400
Lys Ile Thr Asp Ile Ile Ile Phe Phe Gln Ala Val Cys Arg Gly Tyr
785 790 795 800

ctg gcc aga aag gcc ttt gcc aag aag cag cag caa cta agt gcc tta 2448
Leu Ala Arg Lys Ala Phe Ala Lys Lys Gln Gln Gln Leu Ser Ala Leu
801 806 811 816

aag gtc ttg cag cgg aac tgt gcc gcg tac ctg aaa tta cgg cac tgg 2496
Lys Val Leu Gln Arg Asn Cys Ala Ala Tyr Leu Lys Leu Arg His Trp
817 822 827 832

cag tgg tgg cga gtc ttc aca aag gtg aag ccg ctt cta caa gtg act 2544
Gln Trp Trp Arg Val Phe Thr Lys Val Lys Pro Leu Leu Gln Val Thr
833 838 843 848

cgc cag gag gaa gaa ctt cag gcc aaa gat gaa gag ctg ttg aag gtg 2592
Arg Gln Glu Glu Glu Leu Gln Ala Lys Asp Glu Glu Leu Leu Lys Val

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aag gag aag cag aca aag gtg gaa gga gag ctg gag gag atg gag cgg      2640
Lys Glu Lys Gln Thr Lys Val Glu Gly Glu Leu Glu Glu Met Glu Arg
865                 870                 875                 880

aag cac cag cag ctt tta gaa gag aag aat atc ctt gca gaa caa cta      2688
Lys His Gln Gln Leu Leu Glu Glu Lys Asn Ile Leu Ala Glu Gln Leu
881                 886                 891                 896

caa gca gag act gag ctc ttt gct gaa gca gaa gag atg agg gca aga      2736
Gln Ala Glu Thr Glu Leu Phe Ala Glu Ala Glu Glu Met Arg Ala Arg
897                 902                 907                 912

ctt gct gct aaa aag cag gaa tta gaa gag att cta cat gac ttg gag      2784
Leu Ala Ala Lys Lys Gln Glu Leu Glu Glu Ile Leu His Asp Leu Glu
913                 918                 923                 928

tct agg gtt gaa gaa gaa gaa gaa aga aac caa atc ctc caa aat gaa      2832
Ser Arg Val Glu Glu Glu Glu Glu Arg Asn Gln Ile Leu Gln Asn Glu
929                 934                 939                 944

aag aaa aaa atg caa gca cat att cag gac ctg gaa gaa cag cta gac      2880
Lys Lys Lys Met Gln Ala His Ile Gln Asp Leu Glu Glu Gln Leu Asp
945                 950                 955                 960

gag gag gaa ggg gct cgg caa aag ctg cag ctg gaa aag gtg aca gca      2928
Glu Glu Glu Gly Ala Arg Gln Lys Leu Gln Leu Glu Lys Val Thr Ala
961                 966                 971                 976

gag gcc aag atc aag aag atg gaa gag gag att ctg ctt ctc gag gac      2976
Glu Ala Lys Ile Lys Lys Met Glu Glu Glu Ile Leu Leu Leu Glu Asp
977                 982                 987                 992

caa aat tcc aag ttc atc aaa gaa aag aaa ctc atg gaa gat cgc att      3024
Gln Asn Ser Lys Phe Ile Lys Glu Lys Lys Leu Met Glu Asp Arg Ile
993                 998                 1003                1008

gct gag tgt tcc tct cag ctg gct gaa gag gaa gaa aag gcg aaa aac      3072
Ala Glu Cys Ser Ser Gln Leu Ala Glu Glu Glu Glu Lys Ala Lys Asn
1009                1014                1019                1024

ttg gcc aaa atc agg aat aag caa gaa gtg atg atc tca gat tta gaa      3120
Leu Ala Lys Ile Arg Asn Lys Gln Glu Val Met Ile Ser Asp Leu Glu
1025                1030                1035                1040

gaa cgc tta aag aag gaa gaa aag act cgt cag gaa ctg gaa aag gcc      3168
Glu Arg Leu Lys Lys Glu Glu Lys Thr Arg Gln Glu Leu Glu Lys Ala
1041                1046                1051                1056

aaa aga aaa ctc gac ggg gag acg acc gac ctg cag gac cag atc gca      3216
Lys Arg Lys Leu Asp Gly Glu Thr Thr Asp Leu Gln Asp Gln Ile Ala
1057                1062                1067                1072

gag ctg cag gcg cag att gat gag ctc aag ctg cag ctg gcc aag aag      3264
Glu Leu Gln Ala Gln Ile Asp Glu Leu Lys Leu Gln Leu Ala Lys Lys
1073                1078                1083                1088
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gag gag gag ctg cag ggc gca ctg gcc aga ggt gat gat gaa aca ctc      3312
Glu Glu Glu Leu Gln Gly Ala Leu Ala Arg Gly Asp Asp Glu Thr Leu
1089                1094                1099                1104

cat aag aac aat gcc ctt aaa gtt gtg cga gag cta caa gcc caa att      3360
His Lys Asn Asn Ala Leu Lys Val Val Arg Glu Leu Gln Ala Gln Ile
1105                1110                1115                1120

gct gaa ctt cag gaa gac ttt gaa tcc gag aag gct tca cgg aac aag      3408
Ala Glu Leu Gln Glu Asp Phe Glu Ser Glu Lys Ala Ser Arg Asn Lys
1121                1126                1131                1136

gcc gaa aag cag aaa agg gac ttg agt gag gaa ctg gaa gct ctg aaa      3456
Ala Glu Lys Gln Lys Arg Asp Leu Ser Glu Glu Leu Glu Ala Leu Lys
1137                1142                1147                1152

aca gag ctg gag gac acg ctg gac acc acg gca gcc cag cag gaa cta      3504
Thr Glu Leu Glu Asp Thr Leu Asp Thr Thr Ala Ala Gln Gln Glu Leu
1153                1158                1163                1168

cgt aca aaa cgt gaa caa gaa gtg gca gag ctg aag aaa gct ctt gag      3552
Arg Thr Lys Arg Glu Gln Glu Val Ala Glu Leu Lys Lys Ala Leu Glu
1169                1174                1179                1184

gag gaa act aag aac cat gaa gct caa atc cag gac atg aga caa aga      3600
Glu Glu Thr Lys Asn His Glu Ala Gln Ile Gln Asp Met Arg Gln Arg
1185                1190                1195                1200

cac gca aca gcc ctg gag gag ctc tca gag cag ctg gaa cag gcc aag      3648
His Ala Thr Ala Leu Glu Glu Leu Ser Glu Gln Leu Glu Gln Ala Lys
1201                1206                1211                1216

cgg ttc aaa gca aat cta gag aag aac aag cag ggc ctg gag aca gat      3696
Arg Phe Lys Ala Asn Leu Glu Lys Asn Lys Gln Gly Leu Glu Thr Asp
1217                1222                1227                1232

aac aag gag ctg gcg tgt gag gtg aag gtc ctg cag cag gtc aag gct      3744
Asn Lys Glu Leu Ala Cys Glu Val Lys Val Leu Gln Gln Val Lys Ala
1233                1238                1243                1248

gag tct gag cac aag agg aag aag ctc gac gcg cag gtc cag gag ctc      3792
Glu Ser Glu His Lys Arg Lys Lys Leu Asp Ala Gln Val Gln Glu Leu
1249                1254                1259                1264

cat gcc aag gtc tct gaa ggc gac agg ctc agg gtg gag ctg gcg gag      3840
His Ala Lys Val Ser Glu Gly Asp Arg Leu Arg Val Glu Leu Ala Glu
1265                1270                1275                1280

aaa gca agt aag ctg cag aat gag cta gat aat gtc tcc acc ctt ctg      3888
Lys Ala Ser Lys Leu Gln Asn Glu Leu Asp Asn Val Ser Thr Leu Leu
1281                1286                1291                1296

gaa gaa gca gag aag aag ggt att aaa ttt gct aag gat gca gct agt      3936
Glu Glu Ala Glu Lys Lys Gly Ile Lys Phe Ala Lys Asp Ala Ala Ser
1297                1302                1307                1312
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ctt gag tct caa cta cag gat aca cag gag ctt ctt cag gag gag aca      3984
Leu Glu Ser Gln Leu Gln Asp Thr Gln Glu Leu Leu Gln Glu Glu Thr
1313                1318                1323                1328

cgc cag aaa cta aac ctg agc agt cgg atc cgg cag ctg gaa gag gag      4032
Arg Gln Lys Leu Asn Leu Ser Ser Arg Ile Arg Gln Leu Glu Glu Glu
1329                1334                1339                1344

aag aac agt ctt cag gag cag cag gag gag gag gag gag gcc agg aag      4080
Lys Asn Ser Leu Gln Glu Gln Gln Glu Glu Glu Glu Glu Ala Arg Lys
1345                1350                1355                1360

aac ctg gag aag caa gtg ctg gcc ctg cag tcc cag ttg gct gat acc      4128
Asn Leu Glu Lys Gln Val Leu Ala Leu Gln Ser Gln Leu Ala Asp Thr
1361                1366                1371                1376

aag aag aaa gta gat gac gac ctg gga aca att gaa agt ctg gaa gaa      4176
Lys Lys Lys Val Asp Asp Asp Leu Gly Thr Ile Glu Ser Leu Glu Glu
1377                1382                1387                1392

gcc aag aag aag ctt ctg aag gac gcg gag gcc ctg agc cag cgc ctg      4224
Ala Lys Lys Lys Leu Leu Lys Asp Ala Glu Ala Leu Ser Gln Arg Leu
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Glu Glu Lys Ala Leu Ala Tyr Asp Lys Leu Glu Lys Thr Lys Asn Arg
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ctg cag cag gag ctg gac gac ctc acg gtg gac ctg gac cac cag cgc      4320
Leu Gln Gln Glu Leu Asp Asp Leu Thr Val Asp Leu Asp His Gln Arg
1425                1430                1435                1440

cag gtc gcc tcc aac ttg gag aag aag caa gaa gaa gtt tga ccagctg      4369
Gln Val Ala Ser Asn Leu Glu Lys Lys Gln Glu Glu Val  *
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Asp Arg Ala Val Ile Tyr Asn Pro Ala Thr Gln Ala Asp Trp Thr Ala
 17                  22                  27                  32

aaa aag cta gtg tgg att cca tca gaa cgc cat ggt ttt gag gca gct      144
Lys Lys Leu Val Trp Ile Pro Ser Glu Arg His Gly Phe Glu Ala Ala
 33                  38                  43                  48

agt atc aaa gaa gaa cgg gga gat gaa gtt atg gtg gag ttg gca gag      192
Ser Ile Lys Glu Glu Arg Gly Asp Glu Val Met Val Glu Leu Ala Glu
 49                  54                  59                  64

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Asn Gly Lys Lys Ala Met Val Asn Lys Asp Asp Ile Gln Lys Met Asn
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Pro Pro Lys Phe Ser Lys Val Glu Asp Met Ala Glu Leu Thr Cys Leu
 81                  86                  91                  96

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Asn Glu Ala Ser Val Leu His Asn Leu Lys Asp Arg Tyr Tyr Ser Gly
 97                 102                 107                 112

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Leu Ile Tyr Thr Tyr Ser Gly Leu Phe Cys Val Val Ile Asn Pro Tyr
113                 118                 123                 128

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Ala Tyr Arg Cys Met Leu Gln Asp Arg Glu Asp Gln Ser Ile Leu Cys
161                 166                 171                 176

acg ggt gag tca ggt gct ggg aag aca gaa aat aca aag aaa gtt att      576
Thr Gly Glu Ser Gly Ala Gly Lys Thr Glu Asn Thr Lys Lys Val Ile
177                 182                 187                 192

cag tac ctt gcc cat gtt gct tct tca cat aaa gga aga aag gac cat      624
Gln Tyr Leu Ala His Val Ala Ser Ser His Lys Gly Arg Lys Asp His
193                 198                 203                 208

aat att cct cag gaa tcg cct aaa cca gtg aaa cac cag agt gga tcc      672
Asn Ile Pro Gln Glu Ser Pro Lys Pro Val Lys His Gln Ser Gly Ser
209                 214                 219                 224

ctg ttg tat ggg gaa ctt gaa cgg cag ctt ttg caa gca aat cca att      720
Leu Leu Tyr Gly Glu Leu Glu Arg Gln Leu Leu Gln Ala Asn Pro Ile
225                 230                 235                 240

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Leu Glu Ser Phe Gly Asn Ala Lys Thr Val Lys Asn Asp Asn Ser Ser
241                 246                 251                 256

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Arg Phe Gly Lys Phe Ile Arg Ile Asn Phe Asp Val Thr Gly Tyr Ile
257                 262                 267                 272

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Val Gly Ala Asn Ile Glu Thr Tyr Leu Leu Glu Lys Ser Arg Ala Val
273                 278                 283                 288

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289                 294                 299                 304
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Leu Gly Met Asn Val Met Glu Phe Thr Arg Ala Ile Leu Thr Pro Arg
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Ile Lys Val Gly Arg Asp Tyr Val Gln Lys Ala Gln Thr Lys Glu Gln
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Ala Asp Phe Ala Val Glu Ala Leu Ala Lys Ala Thr Tyr Glu Arg Leu
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Phe Arg Trp Leu Val His Arg Ile Asn Lys Ala Leu Asp Arg Thr Lys
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Ile Phe Glu Leu Asn Ser Phe Glu Gln Leu Cys Ile Asn Tyr Thr Asn
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497 502 507 512

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Thr Asp Lys Thr Phe Val Glu Lys Leu Val Gln Glu Gln Gly Ser His
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Ile Ile His Tyr Ala Gly Lys Val Asp Tyr Lys Ala Asp Glu Trp Leu
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Pro Asn Phe Val Arg Cys Ile Ile Pro Asn His Glu Lys Arg Ala Gly
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Lys Leu Asp Pro His Leu Val Leu Asp Gln Leu Arg Cys Asn Gly Val
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721 726 731 736

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Phe Gln Glu Phe Arg Gln Arg Tyr Glu Ile Leu Thr Pro Asn Ala Ile
737 742 747 752

cct aaa ggt ttt atg gat ggt aaa cag gcc tgt gaa cga atg atc cgg 2304

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753                 758                 763                 768

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Ala Leu Glu Leu Asp Pro Asn Leu Tyr Arg Ile Gly Gln Ser Lys Ile
769                 774                 779                 784

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Phe Phe Arg Ala Gly Val Leu Ala His Leu Glu Glu Glu Arg Asp Leu
785                 790                 795                 800

aaa atc acc gat atc att atc ttc ttc cag gcc gtt tgc aga ggt tac      2448
Lys Ile Thr Asp Ile Ile Ile Phe Phe Gln Ala Val Cys Arg Gly Tyr
801                 806                 811                 816

ctg gcc aga aag gcc ttt gcc aag aag cag cag caa cta agt gcc tta      2496
Leu Ala Arg Lys Ala Phe Ala Lys Lys Gln Gln Gln Leu Ser Ala Leu
817                 822                 827                 832

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Lys Val Leu Gln Arg Asn Cys Ala Ala Tyr Leu Lys Leu Arg His Trp
833                 838                 843                 848

cag tgg tgg cga gtc ttc aca aag gtg aag ccg ctt cta caa gtg act      2592
Gln Trp Trp Arg Val Phe Thr Lys Val Lys Pro Leu Leu Gln Val Thr
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Arg Gln Glu Glu Glu Leu Gln Ala Lys Asp Glu Glu Leu Leu Lys Val
865                 870                 875                 880

aag gag aag cag aca aag gtg gaa gga gag ctg gag gag atg gag cgg      2688
Lys Glu Lys Gln Thr Lys Val Glu Gly Glu Leu Glu Glu Met Glu Arg
881                 886                 891                 896

aag cac cag cag ctt tta gaa gag aag aat atc ctt gca gaa caa cta      2736
Lys His Gln Gln Leu Leu Glu Glu Lys Asn Ile Leu Ala Glu Gln Leu
897                 902                 907                 912

caa gca gag act gag ctc ttt gct gaa gca gaa gag atg agg gca aga      2784
Gln Ala Glu Thr Glu Leu Phe Ala Glu Ala Glu Glu Met Arg Ala Arg
913                 918                 923                 928

ctt gct gct aaa aag cag gaa tta gaa gag att cta cat gac ttg gag      2832
Leu Ala Ala Lys Lys Gln Glu Leu Glu Glu Ile Leu His Asp Leu Glu
929                 934                 939                 944

tct agg gtt gaa gaa gaa gaa gaa aga aac caa atc ctc caa aat gaa      2880
Ser Arg Val Glu Glu Glu Glu Glu Arg Asn Gln Ile Leu Gln Asn Glu
945                 950                 955                 960

aag aaa aaa atg caa gca cat att cag gac ctg gaa gaa cag cta gac      2928
Lys Lys Lys Met Gln Ala His Ile Gln Asp Leu Glu Glu Gln Leu Asp
961                 966                 971                 976

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Glu Glu Glu Gly Ala Arg Gln Lys Leu Gln Leu Glu Lys Val Thr Ala
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Glu Ala Lys Ile Lys Lys Met Glu Glu Glu Ile Leu Leu Leu Glu Asp
993                 998                 1003                1008

caa aat tcc aag ttc atc aaa gaa aag aaa ctc atg gaa gat cgc att      3072
Gln Asn Ser Lys Phe Ile Lys Glu Lys Lys Leu Met Glu Asp Arg Ile
1009                1014                1019                1024

gct gag tgt tcc tct cag ctg gct gaa gag gaa gaa aag gcg aaa aac      3120
Ala Glu Cys Ser Ser Gln Leu Ala Glu Glu Glu Glu Lys Ala Lys Asn
1025                1030                1035                1040

ttg gcc aaa atc agg aat aag caa gaa gtg atg atc tca gat tta gaa      3168
Leu Ala Lys Ile Arg Asn Lys Gln Glu Val Met Ile Ser Asp Leu Glu
1041                1046                1051                1056

gaa cgc tta aag aag gaa gaa aag act cgt cag gaa ctg gaa aag gcc      3216
Glu Arg Leu Lys Lys Glu Glu Lys Thr Arg Gln Glu Leu Glu Lys Ala
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aaa aga aaa ctc gac ggg gag acg acc gac ctg cag gac cag atc gca      3264
Lys Arg Lys Leu Asp Gly Glu Thr Thr Asp Leu Gln Asp Gln Ile Ala
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gag ctg cag gcg cag att gat gag ctc aag ctg cag ctg gcc aag aag      3312
Glu Leu Gln Ala Gln Ile Asp Glu Leu Lys Leu Gln Leu Ala Lys Lys
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gag gag gag ctg cag ggc gca ctg gcc aga ggt gat gat gaa aca ctc      3360
Glu Glu Glu Leu Gln Gly Ala Leu Ala Arg Gly Asp Asp Glu Thr Leu
1105                1110                1115                1120

cat aag aac aat gcc ctt aaa gtt gtg cga gag cta caa gcc caa att      3408
His Lys Asn Asn Ala Leu Lys Val Val Arg Glu Leu Gln Ala Gln Ile
1121                1126                1131                1136

gct gaa ctt cag gaa gac ttt gaa tcc gag aag gct tca cgg aac aag      3456
Ala Glu Leu Gln Glu Asp Phe Glu Ser Glu Lys Ala Ser Arg Asn Lys
1137                1142                1147                1152

gcc gaa aag cag aaa agg gac ttg agt gag gaa ctg gaa gct ctg aaa      3504
Ala Glu Lys Gln Lys Arg Asp Leu Ser Glu Glu Leu Glu Ala Leu Lys
1153                1158                1163                1168

aca gag ctg gag gac acg ctg gac acc acg gca gcc cag cag gaa cta      3552
Thr Glu Leu Glu Asp Thr Leu Asp Thr Thr Ala Ala Gln Gln Glu Leu
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cgt aca aaa cgt gaa caa gaa gtg gca gag ctg aag aaa gct ctt gag      3600
Arg Thr Lys Arg Glu Gln Glu Val Ala Glu Leu Lys Lys Ala Leu Glu
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gag gaa act aag aac cat gaa gct caa atc cag gac atg aga caa aga      3648
Glu Glu Thr Lys Asn His Glu Ala Gln Ile Gln Asp Met Arg Gln Arg
1201                1206                1211                1216
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His Ala Thr Ala Leu Glu Glu Leu Ser Glu Gln Leu Glu Gln Ala Lys
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cgg ttc aaa gca aat cta gag aag aac aag cag ggc ctg gag aca gat      3744
Arg Phe Lys Ala Asn Leu Glu Lys Asn Lys Gln Gly Leu Glu Thr Asp
1233                1238                1243                1248

aac aag gag ctg gcg tgt gag gtg aag gtc ctg cag cag gtc aag gct      3792
Asn Lys Glu Leu Ala Cys Glu Val Lys Val Leu Gln Gln Val Lys Ala
1249                1254                1259                1264

gag tct gag cac aag agg aag aag ctc gac gcg cag gtc cag gag ctc      3840
Glu Ser Glu His Lys Arg Lys Lys Leu Asp Ala Gln Val Gln Glu Leu
1265                1270                1275                1280

cat gcc aag gtc tct gaa ggc gac agg ctc agg gtg gag ctg gcg gag      3888
His Ala Lys Val Ser Glu Gly Asp Arg Leu Arg Val Glu Leu Ala Glu
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aaa gca agt aag ctg cag aat gag cta gat aat gtc tcc acc ctt ctg      3936
Lys Ala Ser Lys Leu Gln Asn Glu Leu Asp Asn Val Ser Thr Leu Leu
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Glu Glu Ala Glu Lys Lys Gly Ile Lys Phe Ala Lys Asp Ala Ala Ser
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ctt gag tct caa cta cag gat aca cag gag ctt ctt cag gag gag aca      4032
Leu Glu Ser Gln Leu Gln Asp Thr Gln Glu Leu Leu Gln Glu Glu Thr
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Arg Gln Lys Leu Asn Leu Ser Ser Arg Ile Arg Gln Leu Glu Glu Glu
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Lys Asn Ser Leu Gln Glu Gln Gln Glu Glu Glu Glu Glu Ala Arg Lys
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Asn Leu Glu Lys Gln Val Leu Ala Leu Gln Ser Gln Leu Ala Asp Thr
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Lys Lys Lys Val Asp Asp Asp Leu Gly Thr Ile Glu Ser Leu Glu Glu
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gcc aag aag aag ctt ctg aag gac gcg gag gcc ctg agc cag cgc ctg      4272
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Glu Glu Lys Ala Leu Ala Tyr Asp Lys Leu Glu Lys Thr Lys Asn Arg
1425                1430                1435                1440
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Gln Val Ala Ser Asn Leu Glu Lys Lys Gln Glu Glu Val  *
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ctgtggctga cgtcatctgg aggagatttg ctttcttttt ctccaaaagg ggaggaaatt     180

gaaactgagt ggcccacgat gggaagaggg gaaagcccag gggtacagga ggcctctggg     240

tgaaggcaga ggctaac atg ggg ttc gga gcg acc ttg gcc gtt ggc ctg        290
                   Met Gly Phe Gly Ala Thr Leu Ala Val Gly Leu
                    1               5

acc atc ttt gtg ctg tct gtc gtc act atc atc atc tgc ttc acc tgc       338
Thr Ile Phe Val Leu Ser Val Val Thr Ile Ile Ile Cys Phe Thr Cys
 12                 17                  22                  27

tcc tgc tgc tgc ctt tac aag acg tgc cgc cga cca cgt ccg gtt gtc       386
Ser Cys Cys Cys Leu Tyr Lys Thr Cys Arg Arg Pro Arg Pro Val Val
 28                 33                  38                  43

acc acc acc aca tcc acc act gtg gtg cat gcc cct tat cct cag cct       434
Thr Thr Thr Thr Ser Thr Thr Val Val His Ala Pro Tyr Pro Gln Pro
 44                 49                  54                  59

cca agt gtg ccg ccc agc tac cct gga cca agc tac cag ggc tac cac       482
Pro Ser Val Pro Pro Ser Tyr Pro Gly Pro Ser Tyr Gln Gly Tyr His
 60                 65                  70                  75

acc atg ccg cct cag cca ggg atg cca gca gca ccc tac cca atg cag       530
Thr Met Pro Pro Gln Pro Gly Met Pro Ala Ala Pro Tyr Pro Met Gln
 76                 81                  86                  91

tac cca cca cct tac cca gcc cag ccc atg ggc cca ccg gcc tac cac       578
Tyr Pro Pro Pro Tyr Pro Ala Gln Pro Met Gly Pro Pro Ala Tyr His
 92                 97                 102                 107

gag acc ctg gct gga gga gca gcc gcg ccc tac ccc gcc agc cag cct       626
Glu Thr Leu Ala Gly Gly Ala Ala Ala Pro Tyr Pro Ala Ser Gln Pro
108                113                 118                 123

cct tac aac ccg gcc tac atg gat gcc ccg aag gcg gcc ctc tga gca       674
Pro Tyr Asn Pro Ala Tyr Met Asp Ala Pro Lys Ala Ala Leu  *
124                129                 134

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               Met Ala Asp Lys Thr Pro Gly Gly Ser Gln Lys Ala
                1               5                  10

agt tca aag acg aga tca tca gat gtt cat tca tct gga tct tca gat       156
Ser Ser Lys Thr Arg Ser Ser Asp Val His Ser Ser Gly Ser Ser Asp
 13                 18                  23                  28

gca cat atg gat gca tct gga ccc tca gat agt gat atg cca agt cgg       204
Ala His Met Asp Ala Ser Gly Pro Ser Asp Ser Asp Met Pro Ser Arg
 29                 34                  39                  44

aca cga cct aag agc cca aga aaa cat aat tat agg aat gaa agt gcc       252
Thr Arg Pro Lys Ser Pro Arg Lys His Asn Tyr Arg Asn Glu Ser Ala
 45                 50                  55                  60

cgt gaa agc ctt tgt gat tct cct cat cag aat ctc tca aga cct ctt       300
Arg Glu Ser Leu Cys Asp Ser Pro His Gln Asn Leu Ser Arg Pro Leu
 61                 66                  71                  76

ctg gaa aac aaa ctt aaa gca ttc agt att gga aaa atg agt aca gct       348
Leu Glu Asn Lys Leu Lys Ala Phe Ser Ile Gly Lys Met Ser Thr Ala
 77                 82                  87                  92

aag cga act tta agt aaa aag gaa cag gaa gaa tta aag aaa aag gag       396
Lys Arg Thr Leu Ser Lys Lys Glu Gln Glu Glu Leu Lys Lys Lys Glu
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gat gaa aag gca gct gct gag att tat gag gag ttt ctt gct gct ttt        444
Asp Glu Lys Ala Ala Ala Glu Ile Tyr Glu Glu Phe Leu Ala Ala Phe
109                 114                 119                 124

gaa gga agt gat ggt aat aaa gtg aaa aca ttt gtg cga ggg ggt gtt        492
Glu Gly Ser Asp Gly Asn Lys Val Lys Thr Phe Val Arg Gly Gly Val
125                 130                 135                 140

gtt aat gca gct aaa gaa gaa cat gaa aca gat gaa aaa aga ggt aaa        540
Val Asn Ala Ala Lys Glu Glu His Glu Thr Asp Glu Lys Arg Gly Lys
141                 146                 151                 156

atc tat aag cca tct tca aga ttt gca gat caa aaa aat cct cca aat        588
Ile Tyr Lys Pro Ser Ser Arg Phe Ala Asp Gln Lys Asn Pro Pro Asn
157                 162                 167                 172

cag tct tcc aat gaa aga cca cca tct ctt ctt gtg ata gaa acc aaa        636
Gln Ser Ser Asn Glu Arg Pro Pro Ser Leu Leu Val Ile Glu Thr Lys
173                 178                 183                 188

aaa cct cca ctt aaa aaa gga gag aaa gaa aag aaa aaa agc aat ttg        684
Lys Pro Pro Leu Lys Lys Gly Glu Lys Glu Lys Lys Lys Ser Asn Leu
189                 194                 199                 204

gaa ctc ttc aaa gaa gaa tta aag caa att caa gag gaa cgt gat gag        732
Glu Leu Phe Lys Glu Glu Leu Lys Gln Ile Gln Glu Glu Arg Asp Glu
205                 210                 215                 220

aga cat aaa aca aaa ggc aga tta agt cga ttt gaa cct cct cag tca        780
Arg His Lys Thr Lys Gly Arg Leu Ser Arg Phe Glu Pro Pro Gln Ser
221                 226                 231                 236

gat tct gat ggt cag cgt cgt tct atg gac gcg cct tca aga aga aat        828
Asp Ser Asp Gly Gln Arg Arg Ser Met Asp Ala Pro Ser Arg Arg Asn
237                 242                 247                 252

aga tca tct ggt gtt ctt gat gat tac gca cct ggc tca cat gat gta        876
Arg Ser Ser Gly Val Leu Asp Asp Tyr Ala Pro Gly Ser His Asp Val
253                 258                 263                 268

gga gat cca agc act act aat tta tac ctt gga aac att aat cca cag        924
Gly Asp Pro Ser Thr Thr Asn Leu Tyr Leu Gly Asn Ile Asn Pro Gln
269                 274                 279                 284

atg aat gaa gaa atg ctg tgc caa gaa ttt gga aga ttt gga ccg tta        972
Met Asn Glu Glu Met Leu Cys Gln Glu Phe Gly Arg Phe Gly Pro Leu
285                 290                 295                 300

gcc agt gtg aaa atc atg tgg cct aga act gat gaa gaa aga gcc aga       1020
Ala Ser Val Lys Ile Met Trp Pro Arg Thr Asp Glu Glu Arg Ala Arg
301                 306                 311                 316

gag aga aat tgc ggc ttt gtg gcc ttt atg aat aga aga gat gct gaa       1068
Glu Arg Asn Cys Gly Phe Val Ala Phe Met Asn Arg Arg Asp Ala Glu
317                 322                 327                 332
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aga gct tta aaa aat ttg aat gga aaa atg att atg tct ttt gaa atg      1116
Arg Ala Leu Lys Asn Leu Asn Gly Lys Met Ile Met Ser Phe Glu Met
333                 338                 343                 348

aag tta ggt tgg ggt aaa gct gta cct att cct cca cat cca ata tac      1164
Lys Leu Gly Trp Gly Lys Ala Val Pro Ile Pro Pro His Pro Ile Tyr
349                 354                 359                 364

att ccg cct tct atg atg gaa cat acg ctt ccc cca cct cca tcc gga      1212
Ile Pro Pro Ser Met Met Glu His Thr Leu Pro Pro Pro Pro Ser Gly
365                 370                 375                 380

ctg cct ttt aat gcg cag cct aga gag cgg tta aaa aac cct aat gct      1260
Leu Pro Phe Asn Ala Gln Pro Arg Glu Arg Leu Lys Asn Pro Asn Ala
381                 386                 391                 396

cct atg tta ccg cca cct aaa aac aaa gag gat ttt gag aag act ctg      1308
Pro Met Leu Pro Pro Pro Lys Asn Lys Glu Asp Phe Glu Lys Thr Leu
397                 402                 407                 412

tcg caa gcc ata gtc aaa gtg gtt atc cca aca gaa agg aat ttg ctc      1356
Ser Gln Ala Ile Val Lys Val Val Ile Pro Thr Glu Arg Asn Leu Leu
413                 418                 423                 428

gcc ctg ata cat cga atg ata gag ttt gtt gta cgt gaa ggg cca atg      1404
Ala Leu Ile His Arg Met Ile Glu Phe Val Val Arg Glu Gly Pro Met
429                 434                 439                 444

ttt gaa gct atg att atg aac aga gaa atc aac aat cct atg ttc agg      1452
Phe Glu Ala Met Ile Met Asn Arg Glu Ile Asn Asn Pro Met Phe Arg
445                 450                 455                 460

ttc tta ttt gaa aac cag aca cca gcc cat gtt tac tat agg tgg aag      1500
Phe Leu Phe Glu Asn Gln Thr Pro Ala His Val Tyr Tyr Arg Trp Lys
461                 466                 471                 476

ctt tat tct att ctg cag gga gat tct cca act aaa tgg cgg acg gaa      1548
Leu Tyr Ser Ile Leu Gln Gly Asp Ser Pro Thr Lys Trp Arg Thr Glu
477                 482                 487                 492

gat ttt cgt atg ttc aaa aat gga tct ttt tgg agg cca cca cca tta      1596
Asp Phe Arg Met Phe Lys Asn Gly Ser Phe Trp Arg Pro Pro Pro Leu
493                 498                 503                 508

aat ccg tac ttg cat gga atg tca gaa gag caa gaa aca gaa gct ttt      1644
Asn Pro Tyr Leu His Gly Met Ser Glu Glu Gln Glu Thr Glu Ala Phe
509                 514                 519                 524

gta gag gaa cct agt aaa aag gga gca ctt aag gaa gaa cag agg gat      1692
Val Glu Glu Pro Ser Lys Lys Gly Ala Leu Lys Glu Glu Gln Arg Asp
525                 530                 535                 540

aaa ttg gaa gaa atc ttg cgg gga tta act cca agg aaa aat gat att      1740
Lys Leu Glu Glu Ile Leu Arg Gly Leu Thr Pro Arg Lys Asn Asp Ile
541                 546                 551                 556
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gga gat gca atg gtt ttc tgt ctt aat aat gct gaa gct gct gaa gaa      1788
Gly Asp Ala Met Val Phe Cys Leu Asn Asn Ala Glu Ala Ala Glu Glu
557                 562                 567                 572

ata gtg gat tgc att act gag tcg ttg tcc atc tta aag aca ccc ctt      1836
Ile Val Asp Cys Ile Thr Glu Ser Leu Ser Ile Leu Lys Thr Pro Leu
573                 578                 583                 588

cct aaa aag att gcc aga tta tat ttg gtt tct gat gtt ttg tac aac      1884
Pro Lys Lys Ile Ala Arg Leu Tyr Leu Val Ser Asp Val Leu Tyr Asn
589                 594                 599                 604

tct tca gcc aaa gtt gct aat gct tca tat tat aga aaa ttt ttt gaa      1932
Ser Ser Ala Lys Val Ala Asn Ala Ser Tyr Tyr Arg Lys Phe Phe Glu
605                 610                 615                 620

aca aag tta tgt cag ata ttt tca gac ctc aat gcc acc tat cgt aca      1980
Thr Lys Leu Cys Gln Ile Phe Ser Asp Leu Asn Ala Thr Tyr Arg Thr
621                 626                 631                 636

att caa ggc cat tta caa tct gaa aac ttt aag caa cgg gta atg act      2028
Ile Gln Gly His Leu Gln Ser Glu Asn Phe Lys Gln Arg Val Met Thr
637                 642                 647                 652

tgc ttc aga gca tgg gaa gat tgg gca att tat cca gaa cca ttt ttg      2076
Cys Phe Arg Ala Trp Glu Asp Trp Ala Ile Tyr Pro Glu Pro Phe Leu
653                 658                 663                 668

atc aaa cta caa aat att ttc tta gga ctt gta aat att att gaa gaa      2124
Ile Lys Leu Gln Asn Ile Phe Leu Gly Leu Val Asn Ile Ile Glu Glu
669                 674                 679                 684

aag gaa aca gag gat gtt cca gat gac ctt gat ggt gcc ccc atc gag      2172
Lys Glu Thr Glu Asp Val Pro Asp Asp Leu Asp Gly Ala Pro Ile Glu
685                 690                 695                 700

gaa gag ctt gat ggt gca cct ctg gaa gat gta gat gga att cct att      2220
Glu Glu Leu Asp Gly Ala Pro Leu Glu Asp Val Asp Gly Ile Pro Ile
701                 706                 711                 716

gat gct act ccc atc gat gat ctt gat gga gtc cct ata aaa agt ctt      2268
Asp Ala Thr Pro Ile Asp Asp Leu Asp Gly Val Pro Ile Lys Ser Leu
717                 722                 727                 732

gat gat gat ctt gat gga gtg cct ttg gat gca act gaa gac tca aaa      2316
Asp Asp Asp Leu Asp Gly Val Pro Leu Asp Ala Thr Glu Asp Ser Lys
733                 738                 743                 748

aag aat gag cct ata ttt aaa gtt gcc cca tca aaa tgg gaa gct gtg      2364
Lys Asn Glu Pro Ile Phe Lys Val Ala Pro Ser Lys Trp Glu Ala Val
749                 754                 759                 764

gat gaa tct gaa ttg gaa gca cag gct gtt aca act tct aaa tgg gaa      2412
Asp Glu Ser Glu Leu Glu Ala Gln Ala Val Thr Thr Ser Lys Trp Glu
765                 770                 775                 780

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gaa gaa gaa agt gaa gat gaa gaa gat act caa agt tcc aaa tct gaa      2508
Glu Glu Glu Ser Glu Asp Glu Glu Asp Thr Gln Ser Ser Lys Ser Glu
797                 802                 807                 812

gaa cat cat ttg tac tct aat cca atc aaa gaa gaa atg act gag tct      2556
Glu His His Leu Tyr Ser Asn Pro Ile Lys Glu Glu Met Thr Glu Ser
813                 818                 823                 828

aag ttc tct aag tac tct gaa atg agt gag gaa aaa cga gcc aaa ctt      2604
Lys Phe Ser Lys Tyr Ser Glu Met Ser Glu Glu Lys Arg Ala Lys Leu
829                 834                 839                 844

cgt gaa att gag ctc aaa gtt atg aag ttt cag gat gaa ttg gaa tct      2652
Arg Glu Ile Glu Leu Lys Val Met Lys Phe Gln Asp Glu Leu Glu Ser
845                 850                 855                 860

ggg aaa aga cct aaa aaa cca ggc cag agt ttt cag gag caa gta gaa      2700
Gly Lys Arg Pro Lys Lys Pro Gly Gln Ser Phe Gln Glu Gln Val Glu
861                 866                 871                 876

cac tac aga gat aaa ctt ctt caa cga gag aaa gag aaa gag tta gaa      2748
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877                 882                 887                 892

aga gaa cga gaa aga gac aag aaa gat aaa gaa aaa ttg gaa tct cgc      2796
Arg Glu Arg Glu Arg Asp Lys Lys Asp Lys Glu Lys Leu Glu Ser Arg
893                 898                 903                 908

tcc aaa gac aag aag gaa aaa gat gag tgt act ccg aca agg aag gaa      2844
Ser Lys Asp Lys Lys Glu Lys Asp Glu Cys Thr Pro Thr Arg Lys Glu
909                 914                 919                 924

agg aag agg cga cac agt aca tcc ccc agc cca tct cgc agt agc agt      2892
Arg Lys Arg Arg His Ser Thr Ser Pro Ser Pro Ser Arg Ser Ser Ser
925                 930                 935                 940

ggt aga cga gtg aaa tcc cca tca cca aaa tcg gag cga tca gag cgt      2940
Gly Arg Arg Val Lys Ser Pro Ser Pro Lys Ser Glu Arg Ser Glu Arg
941                 946                 951                 956

tca gaa aga tct cat aaa gag agc tca cgg tcc agg tca tct cac aaa      2988
Ser Glu Arg Ser His Lys Glu Ser Ser Arg Ser Arg Ser Ser His Lys
957                 962                 967                 972

gat tct cct aga gat gtt agc aaa aaa gcc aaa aga tca cca tct ggt      3036
Asp Ser Pro Arg Asp Val Ser Lys Lys Ala Lys Arg Ser Pro Ser Gly
973                 978                 983                 988

tca agg aca cct aaa agg tct agg cga tca cgg tct aga tct cct aaa      3084
Ser Arg Thr Pro Lys Arg Ser Arg Arg Ser Arg Ser Arg Ser Pro Lys
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taatttactt acttttaatg taaggattag atttattgtt gagctgcttt ccagatcaga    7143

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Ser Ser Lys Thr Arg Ser Ser Asp Val His Ser Ser Gly Ser Ser Asp
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gca cat atg gat gca tct gga ccc tca gat agt gat atg cca agt cgg     204
Ala His Met Asp Ala Ser Gly Pro Ser Asp Ser Asp Met Pro Ser Arg
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Arg Glu Ser Leu Cys Asp Ser Pro His Gln Asn Leu Ser Arg Pro Leu
 61                 66                  71                  76

ctg gaa aac aaa ctt aaa gca ttc agt att gga aaa atg agt aca gct      348
Leu Glu Asn Lys Leu Lys Ala Phe Ser Ile Gly Lys Met Ser Thr Ala
 77                 82                  87                  92

aag cga act tta agt aaa aag gaa cag gaa gaa tta aag aaa aag gag      396
Lys Arg Thr Leu Ser Lys Lys Glu Gln Glu Glu Leu Lys Lys Lys Glu
 93                 98                 103                 108

gat gaa aag gca gct gct gag att tat gag gag ttt ctt gct gct ttt      444
Asp Glu Lys Ala Ala Ala Glu Ile Tyr Glu Glu Phe Leu Ala Ala Phe
109                114                 119                 124

gaa gga agt gat ggt aat aaa gtg aaa aca ttt gtg cga ggg ggt gtt      492
Glu Gly Ser Asp Gly Asn Lys Val Lys Thr Phe Val Arg Gly Gly Val
125                130                 135                 140

gtt aat gca gct aaa gaa gaa cat gaa aca gat gaa aaa aga ggt aaa      540
Val Asn Ala Ala Lys Glu Glu His Glu Thr Asp Glu Lys Arg Gly Lys
141                146                 151                 156

atc tat aag cca tct tca aga ttt gca gat caa aaa aat cct cca aat      588
Ile Tyr Lys Pro Ser Ser Arg Phe Ala Asp Gln Lys Asn Pro Pro Asn
157                162                 167                 172

cag tct tcc aat gaa aga cca cca tct ctt ctt gtg ata gaa acc aaa      636
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173                178                 183                 188

aaa cct cca ctt aaa aaa gga gag aaa gaa aag aaa aaa agc aat ttg      684
Lys Pro Pro Leu Lys Lys Gly Glu Lys Glu Lys Lys Lys Ser Asn Leu
189                194                 199                 204

gaa ctc ttc aaa gaa gaa tta aag caa att caa gag gaa cgt gat gag      732
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205                210                 215                 220

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Arg His Lys Thr Lys Gly Arg Leu Ser Arg Phe Glu Pro Pro Gln Ser
221                226                 231                 236

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237                242                 247                 252

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Ala Ser Val Lys Ile Met Trp Pro Arg Thr Asp Glu Glu Arg Ala Arg
301                 306                 311                 316

gag aga aat tgc ggc ttt gtg gcc ttt atg aat aga aga gat gct gaa        1068
Glu Arg Asn Cys Gly Phe Val Ala Phe Met Asn Arg Arg Asp Ala Glu
317                 322                 327                 332

aga gct tta aaa aat ttg aat gga aaa atg att atg tct ttt gaa atg        1116
Arg Ala Leu Lys Asn Leu Asn Gly Lys Met Ile Met Ser Phe Glu Met
333                 338                 343                 348

aag tta ggt tgg ggt aaa gct gta cct att cct cca cat cca ata tac        1164
Lys Leu Gly Trp Gly Lys Ala Val Pro Ile Pro Pro His Pro Ile Tyr
349                 354                 359                 364

att ccg cct tct atg atg gaa cat acg ctt ccc cca cct cca tcc gga        1212
Ile Pro Pro Ser Met Met Glu His Thr Leu Pro Pro Pro Pro Ser Gly
365                 370                 375                 380

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Leu Pro Phe Asn Ala Gln Pro Arg Glu Arg Leu Lys Asn Pro Asn Ala
381                 386                 391                 396

cct atg tta ccg cca cct aaa aac aaa gag gat ttt gag aag act ctg        1308
Pro Met Leu Pro Pro Pro Lys Asn Lys Glu Asp Phe Glu Lys Thr Leu
397                 402                 407                 412

tcg caa gcc ata gtc aaa gtg gtt atc cca aca gaa agg aat ttg ctc        1356
Ser Gln Ala Ile Val Lys Val Val Ile Pro Thr Glu Arg Asn Leu Leu
413                 418                 423                 428

gcc ctg ata cat cga atg ata gag ttt gtt gta cgt gaa ggg cca atg        1404
Ala Leu Ile His Arg Met Ile Glu Phe Val Val Arg Glu Gly Pro Met
429                 434                 439                 444

ttt gaa gct atg att atg aac aga gaa atc aac aat cct atg ttc agg        1452
Phe Glu Ala Met Ile Met Asn Arg Glu Ile Asn Asn Pro Met Phe Arg
445                 450                 455                 460

ttc tta ttt gaa aac cag aca cca gcc cat gtt tac tat agg tgg aag        1500
Phe Leu Phe Glu Asn Gln Thr Pro Ala His Val Tyr Tyr Arg Trp Lys
461                 466                 471                 476

ctt tat tct att ctg cag gga gat tct cca act aaa tgg cgg acg gaa        1548
Leu Tyr Ser Ile Leu Gln Gly Asp Ser Pro Thr Lys Trp Arg Thr Glu
477                 482                 487                 492

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Asp Phe Arg Met Phe Lys Asn Gly Ser Phe Trp Arg Pro Pro Pro Leu
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aat ccg tac ttg cat gga atg tca gaa gag caa gaa aca gaa gct ttt      1644
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509                 514                 519                 524

gta gag gaa cct agt aaa aag gga gca ctt aag gaa gaa cag agg gat      1692
Val Glu Glu Pro Ser Lys Lys Gly Ala Leu Lys Glu Glu Gln Arg Asp
525                 530                 535                 540

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Lys Leu Glu Glu Ile Leu Arg Gly Leu Thr Pro Arg Lys Asn Asp Ile
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gga gat gca atg gtt ttc tgt ctt aat aat gct gaa gct gct gaa gaa      1788
Gly Asp Ala Met Val Phe Cys Leu Asn Asn Ala Glu Ala Ala Glu Glu
557                 562                 567                 572

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Ile Val Asp Cys Ile Thr Glu Ser Leu Ser Ile Leu Lys Thr Pro Leu
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cct aaa aag att gcc aga tta tat ttg gtt tct gat gtt ttg tac aac      1884
Pro Lys Lys Ile Ala Arg Leu Tyr Leu Val Ser Asp Val Leu Tyr Asn
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Thr Lys Leu Cys Gln Ile Phe Ser Asp Leu Asn Ala Thr Tyr Arg Thr
621                 626                 631                 636

att caa ggc cat tta caa tct gaa aac ttt aag caa cgg gta atg act      2028
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637                 642                 647                 652

tgc ttc aga gca tgg gaa gat tgg gca att tat cca gaa cca ttt ttg      2076
Cys Phe Arg Ala Trp Glu Asp Trp Ala Ile Tyr Pro Glu Pro Phe Leu
653                 658                 663                 668

atc aaa cta caa aat att ttc tta gga ctt gta aat att att gaa gaa      2124
Ile Lys Leu Gln Asn Ile Phe Leu Gly Leu Val Asn Ile Ile Glu Glu
669                 674                 679                 684

aag gaa aca gag gat gtt cca gat gac ctt gat ggt gcc ccc atc gag      2172
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685                 690                 695                 700

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Glu Glu Leu Asp Gly Ala Pro Leu Glu Asp Val Asp Gly Ile Pro Ile
701                 706                 711                 716

gat gct act ccc atc gat gat ctt gat gga gtc cct ata aaa agt ctt      2268
Asp Ala Thr Pro Ile Asp Asp Leu Asp Gly Val Pro Ile Lys Ser Leu
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Lys Asn Glu Pro Ile Phe Lys Val Ala Pro Ser Lys Trp Glu Ala Val
749 754 759 764

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797 802 807 812

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Gly Lys Arg Pro Lys Lys Pro Gly Gln Ser Phe Gln Glu Gln Val Glu
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His Tyr Arg Asp Lys Leu Leu Gln Arg Glu Lys Glu Lys Glu Leu Glu
877 882 887 892

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925 930 935 940

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       1               5                  10

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Leu Ser Asp Ser Gly Ser Phe Val Ser Ser Arg Ala Arg Arg Glu Lys
 16                 21                  26                  31

aaa tca aag aag ggg cgc caa gaa gcc cta gaa aga ctg aaa aag gct      263
Lys Ser Lys Lys Gly Arg Gln Glu Ala Leu Glu Arg Leu Lys Lys Ala
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Tyr Glu Glu Val Asp Glu Glu Gln Tyr Ser Lys Leu Val Gln Ala Arg
 64                 69                  74                  79

cag gat gat gac tgg att gtg gat gat gat ggt att ggc tat gtg gaa      407
Gln Asp Asp Asp Trp Ile Val Asp Asp Asp Gly Ile Gly Tyr Val Glu
 80                 85                  90                  95

gat ggc cga gag att ttt gat gat gac ctt gaa gat gat gcc ctt gat      455
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 96                101                 106                 111

gct gat gag aaa gga aaa gat ggt aaa gca cgc aat aaa gac aag agg      503
Ala Asp Glu Lys Gly Lys Asp Gly Lys Ala Arg Asn Lys Asp Lys Arg
112                117                 122                 127

aat gta aag aag ctc gca gtg aca aaa ccg aac aac att aag tca atg      551
Asn Val Lys Lys Leu Ala Val Thr Lys Pro Asn Asn Ile Lys Ser Met
128                133                 138                 143

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Phe Ile Ala Cys Ala Gly Lys Lys Thr Ala Asp Lys Ala Val Asp Leu
144                149                 154                 159

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Ser Lys Asp Gly Leu Leu Gly Asp Ile Leu Gln Asp Leu Asn Thr Glu
160                165                 170                 175

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176                181                 186                 191

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Ser Ile Gly Ala Ser Pro Asn Pro Phe Ser Val His Thr Ala Thr Ala
192                197                 202                 207

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Val Pro Ser Gly Lys Ile Ala Ser Pro Val Ser Arg Lys Glu Pro Pro
208                213                 218                 223

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240                245                 250                 255

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288 293 298 303

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Gly Ser Phe Leu Pro Asp Val Ser Cys Trp Asp Ile Asp Gln Glu Gly
304 309 314 319

gat agc agt ttc tca gtg caa gaa gtt caa gtg gat tcc agt cac ctc 1127
Asp Ser Ser Phe Ser Val Gln Glu Val Gln Val Asp Ser Ser His Leu
320 325 330 335

cca ttg gta aaa ggg gca gat gag gaa caa gta ttc cac ttt tat tgg 1175
Pro Leu Val Lys Gly Ala Asp Glu Glu Gln Val Phe His Phe Tyr Trp
336 341 346 351

ttg gat gct tat gag gat cag tac aac caa cca ggt gtg gta ttt ctg 1223
Leu Asp Ala Tyr Glu Asp Gln Tyr Asn Gln Pro Gly Val Val Phe Leu
352 357 362 367

ttt ggg aaa gtt tgg att gaa tca gcc gag acc cat gtg agc tgt tgt 1271
Phe Gly Lys Val Trp Ile Glu Ser Ala Glu Thr His Val Ser Cys Cys
368 373 378 383

gtc atg gtg aaa aat atc gag cga acg ctt tac ttc ctt ccc cgt gaa 1319
Val Met Val Lys Asn Ile Glu Arg Thr Leu Tyr Phe Leu Pro Arg Glu
384 389 394 399

atg aaa att gat cta aat acg ggg aaa gaa aca gga act cca att tca 1367
Met Lys Ile Asp Leu Asn Thr Gly Lys Glu Thr Gly Thr Pro Ile Ser
400 405 410 415

atg aag gat gtt tat gag gaa ttt gat gag aaa ata gca aca aaa tat 1415
Met Lys Asp Val Tyr Glu Glu Phe Asp Glu Lys Ile Ala Thr Lys Tyr
416 421 426 431

aaa att atg aag ttc aag tct aag cca gtg gaa aag aac tat gct ttt 1463
Lys Ile Met Lys Phe Lys Ser Lys Pro Val Glu Lys Asn Tyr Ala Phe
432 437 442 447

gag ata cct gat gtt cca gaa aaa tct gag tac ttg gaa gtt aaa tac 1511
Glu Ile Pro Asp Val Pro Glu Lys Ser Glu Tyr Leu Glu Val Lys Tyr
448 453 458 463

tcg gct gaa atg cca cag ctt cct caa gat ttg aaa gga gaa act ttt 1559
Ser Ala Glu Met Pro Gln Leu Pro Gln Asp Leu Lys Gly Glu Thr Phe
464 469 474 479

tct cat gta ttt ggg acc aac aca tct agc ctg gaa ctg ttc ttg atg 1607
Ser His Val Phe Gly Thr Asn Thr Ser Ser Leu Glu Leu Phe Leu Met
480 485 490 495

aac aga aag atc aaa gga cct tgt tgg ctt gaa gta aaa aag tcc aca 1655
Asn Arg Lys Ile Lys Gly Pro Cys Trp Leu Glu Val Lys Lys Ser Thr

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gct ctt aat cag cca gtc agt tgg tgt aaa gtt gag gca atg gct ttg      1703
Ala Leu Asn Gln Pro Val Ser Trp Cys Lys Val Glu Ala Met Ala Leu
512                 517                 522                 527

aaa cca gac ctg gtg aat gta att aag gat gtc agt cca cca ccg ctt      1751
Lys Pro Asp Leu Val Asn Val Ile Lys Asp Val Ser Pro Pro Pro Leu
528                 533                 538                 543

gtc gtg atg gct ttc agc atg aag aca atg cag aat gca aag aac cat      1799
Val Val Met Ala Phe Ser Met Lys Thr Met Gln Asn Ala Lys Asn His
544                 549                 554                 559

caa aat gag att att gct atg gca gct ttg gtc cat cac agt ttt gca      1847
Gln Asn Glu Ile Ile Ala Met Ala Ala Leu Val His His Ser Phe Ala
560                 565                 570                 575

ttg gat aaa gca gcc cca aag cct ccc ttt cag tca cac ttc tgt gtt      1895
Leu Asp Lys Ala Ala Pro Lys Pro Pro Phe Gln Ser His Phe Cys Val
576                 581                 586                 591

gtg tct aaa cca aag gac tgt att ttt cca tat gct ttc aaa gaa gtc      1943
Val Ser Lys Pro Lys Asp Cys Ile Phe Pro Tyr Ala Phe Lys Glu Val
592                 597                 602                 607

att gag aaa aag aat gtg aag gtt gag gtt gct gca aca gaa aga aca      1991
Ile Glu Lys Lys Asn Val Lys Val Glu Val Ala Ala Thr Glu Arg Thr
608                 613                 618                 623

ctg cta ggt ttt ttc ctt gca aaa gtt cac aaa att gat cct gat atc      2039
Leu Leu Gly Phe Phe Leu Ala Lys Val His Lys Ile Asp Pro Asp Ile
624                 629                 634                 639

att gtg ggt cat aat att tat ggg ttt gaa ctg gaa gta cta ctg cag      2087
Ile Val Gly His Asn Ile Tyr Gly Phe Glu Leu Glu Val Leu Leu Gln
640                 645                 650                 655

aga att aat gtg tgc aaa gct cct cac tgg tcc aag ata ggt cga ctg      2135
Arg Ile Asn Val Cys Lys Ala Pro His Trp Ser Lys Ile Gly Arg Leu
656                 661                 666                 671

aag cga tcc aac atg cca aag ctt ggg ggc cgg agt gga ttt ggt gaa      2183
Lys Arg Ser Asn Met Pro Lys Leu Gly Gly Arg Ser Gly Phe Gly Glu
672                 677                 682                 687

aga aat gct acc tgt ggt cga atg atc tgt gat gtg gaa att tca gca      2231
Arg Asn Ala Thr Cys Gly Arg Met Ile Cys Asp Val Glu Ile Ser Ala
688                 693                 698                 703

aag gaa ttg att cgt tgt aaa agc tac cat ctg tct gaa ctt gtt cag      2279
Lys Glu Leu Ile Arg Cys Lys Ser Tyr His Leu Ser Glu Leu Val Gln
704                 709                 714                 719

cag att cta aaa act gaa agg gtt gta atc cca atg gaa aat ata caa      2327
Gln Ile Leu Lys Thr Glu Arg Val Val Ile Pro Met Glu Asn Ile Gln
720                 725                 730                 735
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aat atg tac agt gaa tct tct caa ctg tta tac ctg ttg gaa cac acc     2375
Asn Met Tyr Ser Glu Ser Ser Gln Leu Leu Tyr Leu Leu Glu His Thr
736                 741                 746                 751

tgg aaa gat gcc aag ttc att ttg cag atc atg tgt gag cta aat gtt     2423
Trp Lys Asp Ala Lys Phe Ile Leu Gln Ile Met Cys Glu Leu Asn Val
752                 757                 762                 767

ctt cca tta gca ttg cag atc act aac atc gct ggg aac att atg tcc     2471
Leu Pro Leu Ala Leu Gln Ile Thr Asn Ile Ala Gly Asn Ile Met Ser
768                 773                 778                 783

agg acg ctg atg ggt gga cga tcc gag cgt aac gag ttc ttg ttg ctt     2519
Arg Thr Leu Met Gly Gly Arg Ser Glu Arg Asn Glu Phe Leu Leu Leu
784                 789                 794                 799

cat gca ttt tac gaa aac aac tat att gtg cct gac aag cag att ttc     2567
His Ala Phe Tyr Glu Asn Asn Tyr Ile Val Pro Asp Lys Gln Ile Phe
800                 805                 810                 815

aga aag cct cag caa aaa ctg gga gat gaa gat gaa gaa att gat gga     2615
Arg Lys Pro Gln Gln Lys Leu Gly Asp Glu Asp Glu Glu Ile Asp Gly
816                 821                 826                 831

gat acc aat aaa tac aag aaa gga cgt aag aaa gga gct tat gct gga     2663
Asp Thr Asn Lys Tyr Lys Lys Gly Arg Lys Lys Gly Ala Tyr Ala Gly
832                 837                 842                 847

ggc ttg gtt ttg gac ccc aaa gtt ggt ttt tat gat aag ttc att ttg     2711
Gly Leu Val Leu Asp Pro Lys Val Gly Phe Tyr Asp Lys Phe Ile Leu
848                 853                 858                 863

ctt ctg gac ttc aac agt cta tat cct tcc atc att cag gaa ttt aac     2759
Leu Leu Asp Phe Asn Ser Leu Tyr Pro Ser Ile Ile Gln Glu Phe Asn
864                 869                 874                 879

att tgt ttt aca aca gta caa aga gtt gct tca gag gca cag aaa gtt     2807
Ile Cys Phe Thr Thr Val Gln Arg Val Ala Ser Glu Ala Gln Lys Val
880                 885                 890                 895

aca gag gat gga gaa caa gaa cag atc cct gag ttg cca gat cca agc     2855
Thr Glu Asp Gly Glu Gln Glu Gln Ile Pro Glu Leu Pro Asp Pro Ser
896                 901                 906                 911

tta gaa atg ggc att ttg ccc aga gag atc cgg aaa ctg gta gaa cgg     2903
Leu Glu Met Gly Ile Leu Pro Arg Glu Ile Arg Lys Leu Val Glu Arg
912                 917                 922                 927

aga aaa caa gtc aaa cag cta atg aaa cag caa gac tta aat cca gac     2951
Arg Lys Gln Val Lys Gln Leu Met Lys Gln Gln Asp Leu Asn Pro Asp
928                 933                 938                 943

ctt att ctt cag tat gac att cga cag aag gct ttg aag ctc aca gcg     2999
Leu Ile Leu Gln Tyr Asp Ile Arg Gln Lys Ala Leu Lys Leu Thr Ala
944                 949                 954                 959
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aac agt atg tat ggt tgc ctg gga ttt tcc tat agc aga ttt tac gcc      3047
Asn Ser Met Tyr Gly Cys Leu Gly Phe Ser Tyr Ser Arg Phe Tyr Ala
960                 965                 970                 975

aaa cca ctg gct gcc ttg gtg aca tac aaa gga agg gag att ttg atg      3095
Lys Pro Leu Ala Ala Leu Val Thr Tyr Lys Gly Arg Glu Ile Leu Met
976                 981                 986                 991

cat acg aaa gag atg gta caa aag atg aat ctt gaa gtt att tat gga      3143
His Thr Lys Glu Met Val Gln Lys Met Asn Leu Glu Val Ile Tyr Gly
992                 997                 1002                1007

gat aca gat tca att atg ata aac acc aat agc acc aat ctg gaa gaa      3191
Asp Thr Asp Ser Ile Met Ile Asn Thr Asn Ser Thr Asn Leu Glu Glu
1008                1013                1018                1023

gta ttt aag ttg gga aac aag gta aaa agt gaa gtg aat aag ttg tac      3239
Val Phe Lys Leu Gly Asn Lys Val Lys Ser Glu Val Asn Lys Leu Tyr
1024                1029                1034                1039

aaa ctg ctt gaa ata gac att gat ggg gtt ttc aag tct ctg cta ctg      3287
Lys Leu Leu Glu Ile Asp Ile Asp Gly Val Phe Lys Ser Leu Leu Leu
1040                1045                1050                1055

ctg aaa aaa aag aag tac gct gct ctg gtt gtt gag cca acg tcg gat      3335
Leu Lys Lys Lys Lys Tyr Ala Ala Leu Val Val Glu Pro Thr Ser Asp
1056                1061                1066                1071

ggg aat tat gtc acc aaa cag gag ctc aaa gga tta gat ata gtt aga      3383
Gly Asn Tyr Val Thr Lys Gln Glu Leu Lys Gly Leu Asp Ile Val Arg
1072                1077                1082                1087

aga gat tgg tgt gat ctt gct aaa gac act gga aac ttt gtg att ggc      3431
Arg Asp Trp Cys Asp Leu Ala Lys Asp Thr Gly Asn Phe Val Ile Gly
1088                1093                1098                1103

cag att ctt tct gat caa agc cgg gac act ata gtg gaa aac att cag      3479
Gln Ile Leu Ser Asp Gln Ser Arg Asp Thr Ile Val Glu Asn Ile Gln
1104                1109                1114                1119

aag agg ctg ata gaa att gga gaa aat gtg cta aat ggc agt gtc cca      3527
Lys Arg Leu Ile Glu Ile Gly Glu Asn Val Leu Asn Gly Ser Val Pro
1120                1125                1130                1135

gtg agc cag ttt gaa att aac aag gca ttg aca aag gat ccc cag gat      3575
Val Ser Gln Phe Glu Ile Asn Lys Ala Leu Thr Lys Asp Pro Gln Asp
1136                1141                1146                1151

tac cct gat aaa aaa agc cta cct cat gta cat gtt gcc ctc tgg ata      3623
Tyr Pro Asp Lys Lys Ser Leu Pro His Val His Val Ala Leu Trp Ile
1152                1157                1162                1167

aat tct caa gga ggc aga aag gtg aaa gct gga gat act gtg tca tat      3671
Asn Ser Gln Gly Gly Arg Lys Val Lys Ala Gly Asp Thr Val Ser Tyr
1168                1173                1178                1183

gtc atc tgt cag gat gga tca aac ctc act gca agt cag agg gcc tat      3719
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Val Ile Cys Gln Asp Gly Ser Asn Leu Thr Ala Ser Gln Arg Ala Tyr
1184                1189                1194                1199

gcg cct gag cag ctg cag aaa cag gat aat cta acc att gac acc cag      3767
Ala Pro Glu Gln Leu Gln Lys Gln Asp Asn Leu Thr Ile Asp Thr Gln
1200                1205                1210                1215

tac tac ctg gcc cag cag atc cac cca gtc gtg gct cgg atc tgt gaa      3815
Tyr Tyr Leu Ala Gln Gln Ile His Pro Val Val Ala Arg Ile Cys Glu
1216                1221                1226                1231

cca ata gac gga att gat gct gtc ctc att gca acg tgg ttg gga ctt      3863
Pro Ile Asp Gly Ile Asp Ala Val Leu Ile Ala Thr Trp Leu Gly Leu
1232                1237                1242                1247

gac ccc acc caa ttt aga gtt cat cat tat cat aaa gat gaa gag aat      3911
Asp Pro Thr Gln Phe Arg Val His His Tyr His Lys Asp Glu Glu Asn
1248                1253                1258                1263

gat gct cta ctt ggt ggc cca gca cag ctc act gat gaa gag aaa tac      3959
Asp Ala Leu Leu Gly Gly Pro Ala Gln Leu Thr Asp Glu Glu Lys Tyr
1264                1269                1274                1279

agg gac tgt gaa aga ttc aaa tgt cca tgc cct aca tgt gga act gag      4007
Arg Asp Cys Glu Arg Phe Lys Cys Pro Cys Pro Thr Cys Gly Thr Glu
1280                1285                1290                1295

aat att tat gat aat gtc ttt gat ggt tcg gga aca gat atg gag ccc      4055
Asn Ile Tyr Asp Asn Val Phe Asp Gly Ser Gly Thr Asp Met Glu Pro
1296                1301                1306                1311

agc ttg tat cgt tgc agt aac atc gat tgt aag gct tca cct ctg acc      4103
Ser Leu Tyr Arg Cys Ser Asn Ile Asp Cys Lys Ala Ser Pro Leu Thr
1312                1317                1322                1327

ttt aca gta caa ctg agc aac aaa ttg atc atg gac att aga cgt ttc      4151
Phe Thr Val Gln Leu Ser Asn Lys Leu Ile Met Asp Ile Arg Arg Phe
1328                1333                1338                1343

att aaa aag tac tat gat ggc tgg ttg ata tgt gaa gag cca acc tgt      4199
Ile Lys Lys Tyr Tyr Asp Gly Trp Leu Ile Cys Glu Glu Pro Thr Cys
1344                1349                1354                1359

cgc aat cga act cgt cac ctt ccc ctt caa ttc tcc cga act ggg cct      4247
Arg Asn Arg Thr Arg His Leu Pro Leu Gln Phe Ser Arg Thr Gly Pro
1360                1365                1370                1375

ctt tgc cca gcc tgc atg aaa gct aca ctt caa cca gag tat tct gac      4295
Leu Cys Pro Ala Cys Met Lys Ala Thr Leu Gln Pro Glu Tyr Ser Asp
1376                1381                1386                1391

aag tcc ctg tac acc cag ctg tgc ttt tac cgg tac att ttt gat gcg      4343
Lys Ser Leu Tyr Thr Gln Leu Cys Phe Tyr Arg Tyr Ile Phe Asp Ala
1392                1397                1402                1407

gag tgt gca ctg gag aaa ctt act acc gat cat gag aaa gat aaa ttg      4391
Glu Cys Ala Leu Glu Lys Leu Thr Thr Asp His Glu Lys Asp Lys Leu
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aag aag caa ttt ttt acc ccc aaa gtt ctg cag gac tac aga aaa ctc 4439
Lys Lys Gln Phe Phe Thr Pro Lys Val Leu Gln Asp Tyr Arg Lys Leu
1424 1429 1434 1439

aag aac aca gca gag caa ttc ttg tcc cga agt ggc tac tcc gaa gtg 4487
Lys Asn Thr Ala Glu Gln Phe Leu Ser Arg Ser Gly Tyr Ser Glu Val
1440 1445 1450 1455

aat ctg agc aaa ctc ttc gct ggt tgt gcc gtg aaa tcc taa gggaatc 4536
Asn Leu Ser Lys Leu Phe Ala Gly Cys Ala Val Lys Ser *
1456 1461 1466

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cctggacgtg ctacttggct atacgg atg ctc atg gcg acc tgc tgc ccc tca      173
                             Met Leu Met Ala Thr Cys Cys Pro Ser
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cca acg acg aca gcc tgc acc ggg ccc tgg cag cgg gcc ccg cca ctg      221
Pro Thr Thr Thr Ala Cys Thr Gly Pro Trp Gln Arg Ala Pro Pro Leu
 10                  15                  20                  25

cgc cta ctg gtg cag aag cgg gaa gct gac tcc agc ggc ctg gct ttt      269
Arg Leu Leu Val Gln Lys Arg Glu Ala Asp Ser Ser Gly Leu Ala Phe
 26                  31                  36                  41

gcc tcc aac tct ctg cag cgg cgc aag aaa ggg ctc ttg ctg cgg cca      317
Ala Ser Asn Ser Leu Gln Arg Arg Lys Lys Gly Leu Leu Leu Arg Pro
 42                  47                  52                  57

gtg gca ccc ctg cgc acc cgg cca ccc ttg cta atc agc ctg ccc caa      365
Val Ala Pro Leu Arg Thr Arg Pro Pro Leu Leu Ile Ser Leu Pro Gln
 58                  63                  68                  73

gat ttc cgc cag gtt tcc tca gtc ata gac gtg gac cta ctg cct gag      413
Asp Phe Arg Gln Val Ser Ser Val Ile Asp Val Asp Leu Leu Pro Glu
 74                  79                  84                  89

acc cac cga cgg gtg cgg ctg cac aag cat ggt tca gac cgc ccc ctg      461
Thr His Arg Arg Val Arg Leu His Lys His Gly Ser Asp Arg Pro Leu
 90                  95                 100                 105

ggc ttc tac atc cga gat ggc atg agc gtg cgt gtg gct ccc cag ggc      509
Gly Phe Tyr Ile Arg Asp Gly Met Ser Val Arg Val Ala Pro Gln Gly
106                 111                 116                 121

ctg gag cgg gtt cca gga atc ttc atc tcc cgc ctg gta cgt ggg ggt      557
Leu Glu Arg Val Pro Gly Ile Phe Ile Ser Arg Leu Val Arg Gly Gly
122                 127                 132                 137

ctg gct gag agt aca ggg ctg ctg gcg gtc agt gat gag atc ctc gag      605
Leu Ala Glu Ser Thr Gly Leu Leu Ala Val Ser Asp Glu Ile Leu Glu
138                 143                 148                 153

gtc aat ggc att gaa gta gcc ggg aag acc ttg gac caa gtg acg gac      653
Val Asn Gly Ile Glu Val Ala Gly Lys Thr Leu Asp Gln Val Thr Asp
154                 159                 164                 169

atg atg gtt gcc aac agc cat aac ctc att gtc act gtc aag ccc gcc      701
Met Met Val Ala Asn Ser His Asn Leu Ile Val Thr Val Lys Pro Ala
170                 175                 180                 185
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Pro Pro Ser Ala Gly Pro Gly Pro Ala Glu Pro Asp Ser Asp Asp Asp
202 207 212 217

agc agt gac ctg gtc att gag aac cgc cag cct ccc agt tcc aat ggg 845
Ser Ser Asp Leu Val Ile Glu Asn Arg Gln Pro Pro Ser Ser Asn Gly
218 223 228 233

ctg tct cag ggg ccc ccg tgc tgg gac ctg cac cct ggc tgc cga cat 893
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Pro Gly Thr Arg Ser Ser Leu Pro Ser Leu Asp Asp Gln Glu Gln Ala
250 255 260 265

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266 271 276 281

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atg tgc agg ctt tta cag gat aag cgc tac cag tgt gtc tat tcc ttg 165
Met Cys Arg Leu Leu Gln Asp Lys Arg Tyr Gln Cys Val Tyr Ser Leu
1 5 10 15

gca gaa atc ttt aag gtc ctg gct tca ttt tat gtc att ttg gtt ata 213
Ala Glu Ile Phe Lys Val Leu Ala Ser Phe Tyr Val Ile Leu Val Ile
17 22 27 32

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ctt tat ggt ctg acc tct tcc tac agc ctg tgg tgg atg ctg agg agt      261
Leu Tyr Gly Leu Thr Ser Ser Tyr Ser Leu Trp Trp Met Leu Arg Ser
 33                 38                  43                  48

tcc ctg aag caa tat tcc ttt gag gcg tta aga gaa aaa agc aac tac      309
Ser Leu Lys Gln Tyr Ser Phe Glu Ala Leu Arg Glu Lys Ser Asn Tyr
 49                 54                  59                  64

agt gac atc cct gat gtc aag aat gac ttt gcc ttc atc ctt cat ctg      357
Ser Asp Ile Pro Asp Val Lys Asn Asp Phe Ala Phe Ile Leu His Leu
 65                 70                  75                  80

gct gat cag tat gat cct ctt tat tcc aaa cgc ttc tcc ata ttc cta      405
Ala Asp Gln Tyr Asp Pro Leu Tyr Ser Lys Arg Phe Ser Ile Phe Leu
 81                 86                  91                  96

tca gag gtc agt gag aac aaa ctg aaa cag atc aac ctc aat aat gaa      453
Ser Glu Val Ser Glu Asn Lys Leu Lys Gln Ile Asn Leu Asn Asn Glu
 97                102                 107                 112

tgg aca gtt gag aaa ctg aaa agt aag ctt gtg aaa aat gcc cag gac      501
Trp Thr Val Glu Lys Leu Lys Ser Lys Leu Val Lys Asn Ala Gln Asp
113                118                 123                 128

aag ata gaa ctg cat ctt ttt atg ctc aac ggt ctt cca gac aat gtc      549
Lys Ile Glu Leu His Leu Phe Met Leu Asn Gly Leu Pro Asp Asn Val
129                134                 139                 144

ttt gag tta act gaa atg gaa gtg cta agc ctg gag ctt atc cca gag      597
Phe Glu Leu Thr Glu Met Glu Val Leu Ser Leu Glu Leu Ile Pro Glu
145                150                 155                 160

gtg aag ctg ccc tct gca gtc tca cag ctg gtc aac ctc aag gag ctt      645
Val Lys Leu Pro Ser Ala Val Ser Gln Leu Val Asn Leu Lys Glu Leu
161                166                 171                 176

cgt gtg tac cat tca tct ctg gtc gta gac cat cct gca ctg gcc ttt      693
Arg Val Tyr His Ser Ser Leu Val Val Asp His Pro Ala Leu Ala Phe
177                182                 187                 192

cta gag gag aat tta aaa atc ctc cgc ctg aaa ttt act gaa atg gga      741
Leu Glu Glu Asn Leu Lys Ile Leu Arg Leu Lys Phe Thr Glu Met Gly
193                198                 203                 208

aaa atc cca cgc tgg gta ttt cac ctc aag aat ctc aag gaa ctt tat      789
Lys Ile Pro Arg Trp Val Phe His Leu Lys Asn Leu Lys Glu Leu Tyr
209                214                 219                 224

ctt tcg ggc tgt gtt ctc cct gaa cag ttg agt act atg cag ttg gag      837
Leu Ser Gly Cys Val Leu Pro Glu Gln Leu Ser Thr Met Gln Leu Glu
225                230                 235                 240

ggc ttt cag gac tta aaa aat cta agg acc ctg tac ttg aag agc agc      885
Gly Phe Gln Asp Leu Lys Asn Leu Arg Thr Leu Tyr Leu Lys Ser Ser
241                246                 251                 256

ctc tcc cgg atc cca caa gtt gtt aca gac ctc ctg cct tca ttg cag      933
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10037270.010402

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Leu Ser Arg Ile Pro Gln Val Val Thr Asp Leu Leu Pro Ser Leu Gln
257                 262                 267                 272

aaa ctg tcc ctt gat aat gag gga agc aaa ctg gtt gtg ttg aac aac      981
Lys Leu Ser Leu Asp Asn Glu Gly Ser Lys Leu Val Val Leu Asn Asn
273                 278                 283                 288

ttg aaa aag atg gtc aat ctg aaa agc cta gaa ctg atc agc tgt gac     1029
Leu Lys Lys Met Val Asn Leu Lys Ser Leu Glu Leu Ile Ser Cys Asp
289                 294                 299                 304

ctg gaa cgc atc cca cat tcc att ttc agc ctg aat aat ttg cat gag     1077
Leu Glu Arg Ile Pro His Ser Ile Phe Ser Leu Asn Asn Leu His Glu
305                 310                 315                 320

tta gac cta agg gaa aat aac ctt aaa act gtg gaa gag atc att agc     1125
Leu Asp Leu Arg Glu Asn Asn Leu Lys Thr Val Glu Glu Ile Ile Ser
321                 326                 331                 336

ttt cag cat ctt cag aat ctt tcc tgc tta aag ttg tgg cac aat aac     1173
Phe Gln His Leu Gln Asn Leu Ser Cys Leu Lys Leu Trp His Asn Asn
337                 342                 347                 352

att gct tat att cct gca cag att ggg gca tta tct aac cta gag cag     1221
Ile Ala Tyr Ile Pro Ala Gln Ile Gly Ala Leu Ser Asn Leu Glu Gln
353                 358                 363                 368

ctc tct ttg gac cat aat aat att gag aat ctg ccc ttg cag ctt ttc     1269
Leu Ser Leu Asp His Asn Asn Ile Glu Asn Leu Pro Leu Gln Leu Phe
369                 374                 379                 384

cta tgc act aaa cta cat tat ttg gat cta agc tat aac cac ttg acc     1317
Leu Cys Thr Lys Leu His Tyr Leu Asp Leu Ser Tyr Asn His Leu Thr
385                 390                 395                 400

ttc att cca gaa gaa atc cag tat ctg agt aat ttg cag tac ttt gct     1365
Phe Ile Pro Glu Glu Ile Gln Tyr Leu Ser Asn Leu Gln Tyr Phe Ala
401                 406                 411                 416

gtg acc aac aac aat att gag atg cta cca gat ggg ctg ttt cag tgc     1413
Val Thr Asn Asn Asn Ile Glu Met Leu Pro Asp Gly Leu Phe Gln Cys
417                 422                 427                 432

aaa aag ctg cag tgt tta ctt ttg ggg aaa aat agc ttg atg aat ttg     1461
Lys Lys Leu Gln Cys Leu Leu Leu Gly Lys Asn Ser Leu Met Asn Leu
433                 438                 443                 448

tcc cct cat gtg ggt gag ctg tca aac ctt act cat ctg gag ctc att     1509
Ser Pro His Val Gly Glu Leu Ser Asn Leu Thr His Leu Glu Leu Ile
449                 454                 459                 464

ggt aat tac ctg gaa aca ctt cct cct gaa cta gaa gga tgt cag tcc     1557
Gly Asn Tyr Leu Glu Thr Leu Pro Pro Glu Leu Glu Gly Cys Gln Ser
465                 470                 475                 480

cta aaa cgg aac tgt ctg att gtt gag gag aac ttg ctc aat act ctt     1605
Leu Lys Arg Asn Cys Leu Ile Val Glu Glu Asn Leu Leu Asn Thr Leu
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481                 486                 491                 496

cct ctc cct gta aca gaa cgt tta cag acg tgc tta gac aaa tgt tga      1653
Pro Leu Pro Val Thr Glu Arg Leu Gln Thr Cys Leu Asp Lys Cys  *
497                 502                 507                 512

cttaaagaaa agagacccgt gtttcaaaat catttttaaa agtatgctcg gccgggcgtg   1713

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caggagttcg agaccagtct ggccaacctg gtgaaacccc atctctgcta aaactacaaa   1833

aaaattagcc aggcgtggtg gcgtgcgcct gtaatcccag ctacttggga ggctgacgca   1893

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gttgcaagaa atgcacatcc agggtggact gggagctatg aaatgactaa attcctcctt   2253

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ctccgtatga gtctctcctt gtaccctccc cctgcctcga tgatattact cccccagact     240

tggaagccgc tgccagagtg acgctttgat ggtatctgca agcgtttttg ctgatcttat     300

ctctgccccc tgaatattaa ttccctaatc tggtagcaat ccatctcccc agtgaaggac     360

ctactagagg caggtggggg gagccaccat cagatcataa gcataagaat aatacaaagg     420

ggagggattc ttctgcaacc aagaggcaag aggcgagaga aggaaaaaaa aaaaagcg      478
atg agt tca cca aat ata tgg agc aca gga agc tca gtc tac tcg act      526
Met Ser Ser Pro Asn Ile Trp Ser Thr Gly Ser Ser Val Tyr Ser Thr
1               5                   10                  15

cct gta ttt tca cag aaa atg acg gtg tgg att ctg ctc ctg ctg tcg      574
Pro Val Phe Ser Gln Lys Met Thr Val Trp Ile Leu Leu Leu Leu Ser
17                  22                  27                  32

ctc tac cct ggc ttc act agc cag aaa tct gat gat gac tat gaa gat      622
Leu Tyr Pro Gly Phe Thr Ser Gln Lys Ser Asp Asp Asp Tyr Glu Asp
33                  38                  43                  48

tat gct tct aac aaa aca tgg gtc ttg act cca aaa gtt cct gag ggt      670
Tyr Ala Ser Asn Lys Thr Trp Val Leu Thr Pro Lys Val Pro Glu Gly
49                  54                  59                  64

gat gtc act gtc atc tta aac aac ctg ctg gaa gga tat gac aat aaa      718
Asp Val Thr Val Ile Leu Asn Asn Leu Leu Glu Gly Tyr Asp Asn Lys
65                  70                  75                  80

ctt cgg cct gat ata gga gtg aag cca acg tta att cac aca gac atg      766
Leu Arg Pro Asp Ile Gly Val Lys Pro Thr Leu Ile His Thr Asp Met
81                  86                  91                  96

tat gtg aat agc att ggt cca gtg aat gct atc aat atg gaa tac act      814
Tyr Val Asn Ser Ile Gly Pro Val Asn Ala Ile Asn Met Glu Tyr Thr
97                  102                 107                 112

att gat ata ttt ttt gcg caa acg tgg tat gac aga cgt ttg aaa ttt      862
Ile Asp Ile Phe Phe Ala Gln Thr Trp Tyr Asp Arg Arg Leu Lys Phe
113                 118                 123                 128
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aac agc acc att aaa gtc ctc cga ttg aac agc aac atg gtg ggg aaa      910
Asn Ser Thr Ile Lys Val Leu Arg Leu Asn Ser Asn Met Val Gly Lys
129                 134                 139                 144

atc tgg att cca gac act ttc ttc aga aat tcc aaa aaa gct gat gca      958
Ile Trp Ile Pro Asp Thr Phe Phe Arg Asn Ser Lys Lys Ala Asp Ala
145                 150                 155                 160

cac tgg atc acc acc ccc aac agg atg ctg aga att tgg aat gat ggt     1006
His Trp Ile Thr Thr Pro Asn Arg Met Leu Arg Ile Trp Asn Asp Gly
161                 166                 171                 176

cga gtg ctc tac tcc cta agg ttg aca att gat gct gag tgc caa tta     1054
Arg Val Leu Tyr Ser Leu Arg Leu Thr Ile Asp Ala Glu Cys Gln Leu
177                 182                 187                 192

caa ttg cac aat ttt cca atg gat gaa cac tcc tgc ccc ttg gag ttc     1102
Gln Leu His Asn Phe Pro Met Asp Glu His Ser Cys Pro Leu Glu Phe
193                 198                 203                 208

tcc agt tat ggc tat cca cgt gaa gaa att gtt tat caa tgg aag cga     1150
Ser Ser Tyr Gly Tyr Pro Arg Glu Glu Ile Val Tyr Gln Trp Lys Arg
209                 214                 219                 224

agt tct gtt gaa gtg ggc gac aca aga tcc tgg agg ctt tat caa ttc     1198
Ser Ser Val Glu Val Gly Asp Thr Arg Ser Trp Arg Leu Tyr Gln Phe
225                 230                 235                 240

tca ttt gtt ggt cta aga aat acc acc gaa gta gtg aag aca act tcc     1246
Ser Phe Val Gly Leu Arg Asn Thr Thr Glu Val Val Lys Thr Thr Ser
241                 246                 251                 256

gga gat tat gtg gtc atg tct gtc tac ttt gat ctg agc aga aga atg     1294
Gly Asp Tyr Val Val Met Ser Val Tyr Phe Asp Leu Ser Arg Arg Met
257                 262                 267                 272

gga tac ttt acc atc cag acc tat atc ccc tgc aca ctc att gtc gtc     1342
Gly Tyr Phe Thr Ile Gln Thr Tyr Ile Pro Cys Thr Leu Ile Val Val
273                 278                 283                 288

cta tcc tgg gtg tct ttc tgg atc aat aag gat gct gtt cca gcc aga     1390
Leu Ser Trp Val Ser Phe Trp Ile Asn Lys Asp Ala Val Pro Ala Arg
289                 294                 299                 304

aca tct tta ggt atc acc act gtc ctg aca atg acc acc ctc agc acc     1438
Thr Ser Leu Gly Ile Thr Thr Val Leu Thr Met Thr Thr Leu Ser Thr
305                 310                 315                 320

att gcc cgg aaa tcg ctc ccc aag gtc tcc tat gtc aca gcg atg gat     1486
Ile Ala Arg Lys Ser Leu Pro Lys Val Ser Tyr Val Thr Ala Met Asp
321                 326                 331                 336

ctc ttt gta tct gtt tgt ttc atc ttt gtc ttc tct gct ctg gtg gag     1534
Leu Phe Val Ser Val Cys Phe Ile Phe Val Phe Ser Ala Leu Val Glu
337                 342                 347                 352

tat ggc acc ttg cat tat ttt gtc agc aac cgg aaa cca agc aag gac     1582
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Tyr Gly Thr Leu His Tyr Phe Val Ser Asn Arg Lys Pro Ser Lys Asp
353                 358                 363                 368

aaa gat aaa aag aag aaa aac cct gcc cct acc att gat atc cgc cca      1630
Lys Asp Lys Lys Lys Lys Asn Pro Ala Pro Thr Ile Asp Ile Arg Pro
369                 374                 379                 384

aga tca gca acc att caa atg aat aat gct aca cac ctt caa gag aga      1678
Arg Ser Ala Thr Ile Gln Met Asn Asn Ala Thr His Leu Gln Glu Arg
385                 390                 395                 400

gat gaa gag tac ggc tat gag tgt ctg gac ggc aag gac tgt gcc agt      1726
Asp Glu Glu Tyr Gly Tyr Glu Cys Leu Asp Gly Lys Asp Cys Ala Ser
401                 406                 411                 416

ttt ttc tgc tgt ttt gaa gat tgt cga aca gga gct tgg aga cat ggg      1774
Phe Phe Cys Cys Phe Glu Asp Cys Arg Thr Gly Ala Trp Arg His Gly
417                 422                 427                 432

agg ata cat atc cgc att gcc aaa atg gac tcc tat gct cgg atc ttc      1822
Arg Ile His Ile Arg Ile Ala Lys Met Asp Ser Tyr Ala Arg Ile Phe
433                 438                 443                 448

ttc ccc act gcc ttc tgc ctg ttt aat ctg gtc tat tgg gtc tcc tac      1870
Phe Pro Thr Ala Phe Cys Leu Phe Asn Leu Val Tyr Trp Val Ser Tyr
449                 454                 459                 464

ctc tac ctg tga gga ggtatgggtt ttactgatat ggttcttatt cactgagtct      1925
Leu Tyr Leu  *
465

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             Met Gly Ser Ser Gln Ser Val Glu Ile Pro Gly Gly Gly
               1               5                  10

acc gag ggc tac cac gtt ctg cgg gta caa gaa aat tcc cca gga cac      158
Thr Glu Gly Tyr His Val Leu Arg Val Gln Glu Asn Ser Pro Gly His
 14                 19                 24                 29
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aga gct ggt ttg gag cct ttc ttt gat ttt att gtt tct att aat ggt        206
Arg Ala Gly Leu Glu Pro Phe Phe Asp Phe Ile Val Ser Ile Asn Gly
 30                  35                  40                  45

tca aga tta aat aaa gac aat gac act ctt aag gat ctg ctg aaa gca        254
Ser Arg Leu Asn Lys Asp Asn Asp Thr Leu Lys Asp Leu Leu Lys Ala
 46                  51                  56                  61

aac gtt gaa aag cct gta aag atg ctt atc tat agc agc aaa aca ttg        302
Asn Val Glu Lys Pro Val Lys Met Leu Ile Tyr Ser Ser Lys Thr Leu
 62                  67                  72                  77

gaa ctg cga gag acc tca gtc aca cca agt aac ctg tgg ggc ggc cag        350
Glu Leu Arg Glu Thr Ser Val Thr Pro Ser Asn Leu Trp Gly Gly Gln
 78                  83                  88                  93

ggc tta ttg gga gtg agc att cgt ttc tgc agc ttt gat ggg gca aat        398
Gly Leu Leu Gly Val Ser Ile Arg Phe Cys Ser Phe Asp Gly Ala Asn
 94                  99                 104                 109

gaa aat gtt tgg cat gtg ctg gag gtg gaa tca aat tct cct gca gca        446
Glu Asn Val Trp His Val Leu Glu Val Glu Ser Asn Ser Pro Ala Ala
110                 115                 120                 125

ctg gca ggt ctt aga cca cac agt gat tat ata att gga gca gat aca        494
Leu Ala Gly Leu Arg Pro His Ser Asp Tyr Ile Ile Gly Ala Asp Thr
126                 131                 136                 141

gtc atg aat gag tct gaa gat cta ttc agc ctt atc gaa aca cat gaa        542
Val Met Asn Glu Ser Glu Asp Leu Phe Ser Leu Ile Glu Thr His Glu
142                 147                 152                 157

gca aaa cca ttg aaa ctg tat gtg tac aac aca gac act gat aac tgt        590
Ala Lys Pro Leu Lys Leu Tyr Val Tyr Asn Thr Asp Thr Asp Asn Cys
158                 163                 168                 173

cga gaa gtg att att aca cca aat tct gca tgg ggt gga gaa ggc agc        638
Arg Glu Val Ile Ile Thr Pro Asn Ser Ala Trp Gly Gly Glu Gly Ser
174                 179                 184                 189

cta gga tgt ggc att gga tat ggt tat ttg cat cga ata cct aca cgc        686
Leu Gly Cys Gly Ile Gly Tyr Gly Tyr Leu His Arg Ile Pro Thr Arg
190                 195                 200                 205

cca ttt gag gaa gga aag aaa att tct ctt cca gga caa atg gct ggt        734
Pro Phe Glu Glu Gly Lys Lys Ile Ser Leu Pro Gly Gln Met Ala Gly
206                 211                 216                 221

aca cct att aca cct ctt aaa gat ggg ttt aca gag gtc cag ctg tcc        782
Thr Pro Ile Thr Pro Leu Lys Asp Gly Phe Thr Glu Val Gln Leu Ser
222                 227                 232                 237

tca gtt aat ccc ccg tct ttg tca cca cca gga act aca gga att gaa        830
Ser Val Asn Pro Pro Ser Leu Ser Pro Pro Gly Thr Thr Gly Ile Glu
238                 243                 248                 253
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cag agt ctg act gga ctt tct att agc tca act cca cca gct gtc agt      878
Gln Ser Leu Thr Gly Leu Ser Ile Ser Ser Thr Pro Pro Ala Val Ser
254                 259                 264                 269

agt gtt ctc agt aca ggt gta cca aca gta ccg tta ttg cca cca caa      926
Ser Val Leu Ser Thr Gly Val Pro Thr Val Pro Leu Leu Pro Pro Gln
270                 275                 280                 285

gta aac cag tcc ctc act tct gtg cca cca atg aat cca gct act aca      974
Val Asn Gln Ser Leu Thr Ser Val Pro Pro Met Asn Pro Ala Thr Thr
286                 291                 296                 301

tta cca ggt ctg atg cct tta cca gca gga ctg ccc aac ctc ccc aac     1022
Leu Pro Gly Leu Met Pro Leu Pro Ala Gly Leu Pro Asn Leu Pro Asn
302                 307                 312                 317

ctc aac ctc cgc ctc cca gca cca cac atc atg cca ggg gtt ggc tta     1070
Leu Asn Leu Arg Leu Pro Ala Pro His Ile Met Pro Gly Val Gly Leu
318                 323                 328                 333

cca gaa ctt gta aac cca ggt ctg cca cct ctt cct tcc atg cct ccc     1118
Pro Glu Leu Val Asn Pro Gly Leu Pro Pro Leu Pro Ser Met Pro Pro
334                 339                 344                 349

cga aac tta cct ggc att gca cct ctc ccc ctg cca tcc gag ttc ctc     1166
Arg Asn Leu Pro Gly Ile Ala Pro Leu Pro Leu Pro Ser Glu Phe Leu
350                 355                 360                 365

ccg tca ttc ccc ttg gtt cca gag agc tct tct gca gca agc tca gga     1214
Pro Ser Phe Pro Leu Val Pro Glu Ser Ser Ser Ala Ala Ser Ser Gly
366                 371                 376                 381

gag ctg ctg tct tcc ctc ccg ccc acc agc aac gca ccc tct gac cct     1262
Glu Leu Leu Ser Ser Leu Pro Pro Thr Ser Asn Ala Pro Ser Asp Pro
382                 387                 392                 397

gcc aca act act gca aag gca gac gct gcc tcc tca ctc act gtg gat     1310
Ala Thr Thr Thr Ala Lys Ala Asp Ala Ala Ser Ser Leu Thr Val Asp
398                 403                 408                 413

gtg acg ccc ccc act gcc aag gcc ccc acc acc gtt gag gac aga gtc     1358
Val Thr Pro Pro Thr Ala Lys Ala Pro Thr Thr Val Glu Asp Arg Val
414                 419                 424                 429

ggc gac tcc acc cca gtc agc gag aag cct gtt tct gcg gct gtg gat     1406
Gly Asp Ser Thr Pro Val Ser Glu Lys Pro Val Ser Ala Ala Val Asp
430                 435                 440                 445

gcc aat gct tct gag tca cct taa ctttgaacca ttctttggaa ttggcgtggt    1460
Ala Asn Ala Ser Glu Ser Pro  *
446                 451

atatttaacc acgggagcgt gtctggaaac gcaaactatc attaatttca tactagtttg   1520

taccgtatct gtaggcatcc tgtaaataat tccaagggga aaactaaacg aggacgtggg   1580

ttgtatcctg ccaggttgag tggggctcac acgctagggt gagatgtcag aaagcgcttg   1640
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tattttaaac aaccaaaaag aattgtaagg gtggcttgct gccaggcttg cactgccgtt    1700

cctgggggtg tgcatcttcg ggaaaggtgg tggcggggcg tccactaggt ttcctgtccc    1760

ctgctgctcc ttccgtaaga aaatgaaata ttctatgcct aatactcaca cgcaacattt    1820

cttgtacttt gtaagtcgtt tgcgagaatg cagaccacct cactaaactg taaacggtaa    1880

agagattttt acttttggtc tccgtgagtc gcatctctac taaggtttac acaggaattc    1940

cacctgaaga cttgtgttaa agttctacag cgcgcactgt taactgaacg tctttttctt    2000

cagcctatac gcggatcctt gttttgagct ctcagaatca ctcagacaac attttgtaac    2060

tgctgctgtt gctttctaca tacaccttat aaagtgacat ttcaaaagaa ataaggtgcc    2120

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gtgcgctggc gcgcggacgg cccttccctg gagaagctgc ctgtgcac atg ggc ctg     177
                                                     Met Gly Leu
                                                      1

gtg atc acc gag gtg gag cag gaa ccc agc ttc tcg gac atc gag agc      225
Val Ile Thr Glu Val Glu Gln Glu Pro Ser Phe Ser Asp Ile Glu Ser
  4                 9                  14                  19

ctc gtg gtg tgg tgt atg gcc gtg ggc atc tcc tac att agc gtc tac      273
Leu Val Val Trp Cys Met Ala Val Gly Ile Ser Tyr Ile Ser Val Tyr
 20                 25                  30                  35

gac cac caa ggt att ttc aaa aga aat aat tcc aga ttg atg gat gga      321
Asp His Gln Gly Ile Phe Lys Arg Asn Asn Ser Arg Leu Met Asp Gly
 36                 41                  46                  51

att tta aaa caa cag caa gaa ctt ctg ggc cta gat tgt tca aaa tgc      369
Ile Leu Lys Gln Gln Gln Glu Leu Leu Gly Leu Asp Cys Ser Lys Cys
 52                 57                  62                  67
```

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tca cca gag ttt gca aat agt aat gac aaa gat gat caa gtt tta aat      417
Ser Pro Glu Phe Ala Asn Ser Asn Asp Lys Asp Asp Gln Val Leu Asn
 68                 73                  78                  83

tgc cat ttg gca gtg aag gtg cta tcc ccg gaa gat gga aaa gca gat      465
Cys His Leu Ala Val Lys Val Leu Ser Pro Glu Asp Gly Lys Ala Asp
 84                 89                  94                  99

att gtg aga gcc gct cag gac ttt tgc cag tta gta gcc cag aag caa      513
Ile Val Arg Ala Ala Gln Asp Phe Cys Gln Leu Val Ala Gln Lys Gln
100                105                 110                 115

agg aga ccc aaa gat ttg gat gta gat atg tta gtt tac tca gtt caa      561
Arg Arg Pro Lys Asp Leu Asp Val Asp Met Leu Val Tyr Ser Val Gln
116                121                 126                 131

atg gtt gtc ctg atc ctg att tag tactgaagtt cggtcctgtg gacagcacac      615
Met Val Val Leu Ile Leu Ile  *
132                137

gaggctttct tacctggcac atcagattga ctgagattgt ctctttgcct tcccatctaa    675

acatcagtta tgaggacttt ttctctgccc ttcgtcatta tgcagcctgt gaacagcgtc    735

tgggaaagtc gtggtcattg gttgcataat tccatttgag cttatggagg aaaggaccaa    795

gtgactctga ttttagaaag cacctatgaa accctgtaca cacctatgaa accctgtaca    855

cacctagttc ataatcttca taatttatca acaaacacaa aaaagtgtct tacttgagag    915

tgagtgtgtg cgtgtgtgcg tgcacacatg tgcacgtttg tatgtgtgga aataaacata    975

aatggggacg tgttggagaa ggaaatacat agacctacaa ctttgagcat atagcagtga   1035

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atttttgttc agtccttctt agtgaccaaa ctttaatttt taagaataat atattgactt   1215

actgaactga agcattctga gttgaaagga gctccagagg agtggagttc tgtgttgctc   1275

acatgttaaa atcttgctca ccttcagagc agagggaata cctatcttca gatatccgtc   1335

cattttcatc tcttaattgt agtcaaaagt atgacttgag agtgttgctc tggtattctg   1395

ggttctgaag tctggtattc tggtattctg ggttcaaaag tatgacttga gagtgttgct   1455

ctggtattct gagagttgct ctgtattctg ggttctgaag attatttgaa aaataactcc   1515

tactacattg aaatgcagac ttaaaaattt aaacattgga ttaggcagtc aaaaaaacca   1575

agcaagcata aaaggtcaat aagttgtaat cttgatagta aaggtggaaa acttattata   1635

aatggaaaga aagttttatt tcctttttg tttgatgggc agtatgccat attataccca    1695
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aagttctttt aaaaaatatt tccatcaacc atttttattt aaaataaaca tttgagggaa   1755

gttaccaagg cagctttttt cctcaaaagt aacctgttcc tctttggaat agcacatttt   1815

aggggcatgg ttaatacctg agatttttac tcagtaaatc ctgatggtta ctgtgtgtaa   1875

aatatcttta agtaggattg aaggcctctg tgggggaata aaatattacc aaagtctata   1935

aaaataaatt ttacatgttc tcttttatga cagagagcag cactggttct gttattttta   1995

aaatgaataa ttgatttctt gataggtgtt taatatttct tccctcactg atggattcta   2055

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                Met Cys Leu Gly Arg Met Gly Ala Ser Ser Pro Arg
                1               5                   10

agc ccg gag cct gtc ggg ccg ccg gcg ccc ggt ctc ccc ttc tgc tgc      96
Ser Pro Glu Pro Val Gly Pro Pro Ala Pro Gly Leu Pro Phe Cys Cys
13                  18                  23                  28

gga gga tcc ctg ctg gcg gtt gtg gtg ctg ctt gcg ctg ccg gtg gcc     144
Gly Gly Ser Leu Leu Ala Val Val Val Leu Leu Ala Leu Pro Val Ala
29                  34                  39                  44

tgg ggt caa tgc aat gcc cca gaa tgg ctt cca ttt gcc agg cct acc     192
Trp Gly Gln Cys Asn Ala Pro Glu Trp Leu Pro Phe Ala Arg Pro Thr
45                  50                  55                  60

aac cta act gat gag ttt gag ttt ccc att ggg aca tat ctg aac tat     240
Asn Leu Thr Asp Glu Phe Glu Phe Pro Ile Gly Thr Tyr Leu Asn Tyr
61                  66                  71                  76

gaa tgc cgc cct ggt tat tcc gga aga ccg ttt tct atc atc tgc cta     288
Glu Cys Arg Pro Gly Tyr Ser Gly Arg Pro Phe Ser Ile Ile Cys Leu
77                  82                  87                  92

aaa aac tca gtc tgg act ggt gct aag gac agg tgc aga cgt aaa tca     336
Lys Asn Ser Val Trp Thr Gly Ala Lys Asp Arg Cys Arg Arg Lys Ser
93                  98                  103                 108

tgt cgt aat cct cca gat cct gtg aat ggc atg gtg cat gtg atc aaa     384
Cys Arg Asn Pro Pro Asp Pro Val Asn Gly Met Val His Val Ile Lys
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109                 114                 119                 124

ggc atc cag ttc gga tcc caa att aaa tat tct tgt act aaa gga tac      432
Gly Ile Gln Phe Gly Ser Gln Ile Lys Tyr Ser Cys Thr Lys Gly Tyr
125                 130                 135                 140

cga ctc att ggt tcc tcg tct gcc aca tgc atc atc tca ggt gat act      480
Arg Leu Ile Gly Ser Ser Ser Ala Thr Cys Ile Ile Ser Gly Asp Thr
141                 146                 151                 156

gtc att tgg gat aat gaa aca cct att tgt gac aga att cct tgt ggg      528
Val Ile Trp Asp Asn Glu Thr Pro Ile Cys Asp Arg Ile Pro Cys Gly
157                 162                 167                 172

cta ccc ccc acc atc acc aat gga gat ttc att agc acc aac aga gag      576
Leu Pro Pro Thr Ile Thr Asn Gly Asp Phe Ile Ser Thr Asn Arg Glu
173                 178                 183                 188

aat ttt cac tat gga tca gtg gtg acc tac cgc tgc aat cct gga agc      624
Asn Phe His Tyr Gly Ser Val Val Thr Tyr Arg Cys Asn Pro Gly Ser
189                 194                 199                 204

gga ggg aga aag gtg ttt gag ctt gtg ggt gag ccc tcc ata tac tgc      672
Gly Gly Arg Lys Val Phe Glu Leu Val Gly Glu Pro Ser Ile Tyr Cys
205                 210                 215                 220

acc agc aat gac gat caa gtg ggc atc tgg agc ggc ccc gcc cct cag      720
Thr Ser Asn Asp Asp Gln Val Gly Ile Trp Ser Gly Pro Ala Pro Gln
221                 226                 231                 236

tgc att ata cct aac aaa tgc acg cct cca aat gtg gaa aat gga ata      768
Cys Ile Ile Pro Asn Lys Cys Thr Pro Pro Asn Val Glu Asn Gly Ile
237                 242                 247                 252

ttg gta tct gac aac aga agc tta ttt tcc tta aat gaa gtt gtg gag      816
Leu Val Ser Asp Asn Arg Ser Leu Phe Ser Leu Asn Glu Val Val Glu
253                 258                 263                 268

ttt agg tgt cag cct ggc ttt gtc atg aaa gga ccc cgc cgt gtg aag      864
Phe Arg Cys Gln Pro Gly Phe Val Met Lys Gly Pro Arg Arg Val Lys
269                 274                 279                 284

tgc cag gcc ctg aac aaa tgg gag ccg gag cta cca agc tgc tcc agg      912
Cys Gln Ala Leu Asn Lys Trp Glu Pro Glu Leu Pro Ser Cys Ser Arg
285                 290                 295                 300

gta tgt cag cca cct cca gat gtc ctg cat gct gag cgt acc caa agg      960
Val Cys Gln Pro Pro Pro Asp Val Leu His Ala Glu Arg Thr Gln Arg
301                 306                 311                 316

gac aag gac aac ttt tca cct ggg cag gaa gtg ttc tac agc tgt gag     1008
Asp Lys Asp Asn Phe Ser Pro Gly Gln Glu Val Phe Tyr Ser Cys Glu
317                 322                 327                 332

ccc ggc tac gac ctc aga ggg gct gcg tct atg cgc tgc aca ccc cag     1056
Pro Gly Tyr Asp Leu Arg Gly Ala Ala Ser Met Arg Cys Thr Pro Gln
333                 338                 343                 348
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gga gac tgg agc cct gca gcc ccc aca tgt gaa gtg aaa tcc tgt gat      1104
Gly Asp Trp Ser Pro Ala Ala Pro Thr Cys Glu Val Lys Ser Cys Asp
349                 354                 359                 364

gac ttc atg ggc caa ctt ctt aat ggc cgt gtg cta ttt cca gta aat      1152
Asp Phe Met Gly Gln Leu Leu Asn Gly Arg Val Leu Phe Pro Val Asn
365                 370                 375                 380

ctc cag ctt gga gca aaa gtg gat ttt gtt tgt gat gaa gga ttt caa      1200
Leu Gln Leu Gly Ala Lys Val Asp Phe Val Cys Asp Glu Gly Phe Gln
381                 386                 391                 396

tta aaa ggc agc tct gct agt tac tgt gtc ttg gct gga atg gaa agc      1248
Leu Lys Gly Ser Ser Ala Ser Tyr Cys Val Leu Ala Gly Met Glu Ser
397                 402                 407                 412

ctt tgg aat agc agt gtt cca gtg tgt gaa caa atc ttt tgt cca agt      1296
Leu Trp Asn Ser Ser Val Pro Val Cys Glu Gln Ile Phe Cys Pro Ser
413                 418                 423                 428

cct cca gtt att cct aat ggg aga cac aca gga aaa cct ctg gaa gtc      1344
Pro Pro Val Ile Pro Asn Gly Arg His Thr Gly Lys Pro Leu Glu Val
429                 434                 439                 444

ttt ccc ttt ggg aaa aca gta aat tac aca tgc gac ccc cac cca gac      1392
Phe Pro Phe Gly Lys Thr Val Asn Tyr Thr Cys Asp Pro His Pro Asp
445                 450                 455                 460

aga ggg acg agc ttc gac ctc att gga gag agc acc atc cgc tgc aca      1440
Arg Gly Thr Ser Phe Asp Leu Ile Gly Glu Ser Thr Ile Arg Cys Thr
461                 466                 471                 476

agt gac cct caa ggg aat ggg gtt tgg agc agc cct gcc cct cgc tgt      1488
Ser Asp Pro Gln Gly Asn Gly Val Trp Ser Ser Pro Ala Pro Arg Cys
477                 482                 487                 492

gga att ctg ggt cac tgt caa gcc cca gat cat ttt ctg ttt gcc aag      1536
Gly Ile Leu Gly His Cys Gln Ala Pro Asp His Phe Leu Phe Ala Lys
493                 498                 503                 508

ttg aaa acc caa acc aat gca tct gac ttt ccc att ggg aca tct tta      1584
Leu Lys Thr Gln Thr Asn Ala Ser Asp Phe Pro Ile Gly Thr Ser Leu
509                 514                 519                 524

aag tac gaa tgc cgt cct gag tac tac ggg agg cca ttc tct atc aca      1632
Lys Tyr Glu Cys Arg Pro Glu Tyr Tyr Gly Arg Pro Phe Ser Ile Thr
525                 530                 535                 540

tgt cta gat aac ctg gtc tgg tca agt ccc aaa gat gtc tgt aaa cgt      1680
Cys Leu Asp Asn Leu Val Trp Ser Ser Pro Lys Asp Val Cys Lys Arg
541                 546                 551                 556

aaa tca tgt aaa act cct cca gat cca gtg aat ggc atg gtg cat gtg      1728
Lys Ser Cys Lys Thr Pro Pro Asp Pro Val Asn Gly Met Val His Val
557                 562                 567                 572
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atc aca gac atc cag gtt gga tcc aga atc aac tat tct tgt act aca 1776
Ile Thr Asp Ile Gln Val Gly Ser Arg Ile Asn Tyr Ser Cys Thr Thr
573 578 583 588

ggg cac cga ctc att ggt cac tca tct gct gaa tgt atc ctc tcg ggc 1824
Gly His Arg Leu Ile Gly His Ser Ser Ala Glu Cys Ile Leu Ser Gly
589 594 599 604

aat gct gcc cat tgg agc acg aag ccg cca att tgt caa cga att cct 1872
Asn Ala Ala His Trp Ser Thr Lys Pro Pro Ile Cys Gln Arg Ile Pro
605 610 615 620

tgt ggg cta ccc ccc acc atc gcc aat gga gat ttc att agc acc aac 1920
Cys Gly Leu Pro Pro Thr Ile Ala Asn Gly Asp Phe Ile Ser Thr Asn
621 626 631 636

aga gag aat ttt cac tat gga tca gtg gtg acc tac cgc tgc aat ccc 1968
Arg Glu Asn Phe His Tyr Gly Ser Val Val Thr Tyr Arg Cys Asn Pro
637 642 647 652

gga agc gga ggg aga aag gtg ttt gag ctt gtg ggt gag ccc tcc ata 2016
Gly Ser Gly Gly Arg Lys Val Phe Glu Leu Val Gly Glu Pro Ser Ile
653 658 663 668

tac tgc acc agc aat gac gat caa gtg ggc atc tgg agc ggc ccg gcc 2064
Tyr Cys Thr Ser Asn Asp Asp Gln Val Gly Ile Trp Ser Gly Pro Ala
669 674 679 684

cct cag tgc att ata cct aac aaa tgc acg cct cca aat gtg gaa aat 2112
Pro Gln Cys Ile Ile Pro Asn Lys Cys Thr Pro Pro Asn Val Glu Asn
685 690 695 700

gga ata ttg gta tct gac aac aga agc tta ttt tcc tta aat gaa gtt 2160
Gly Ile Leu Val Ser Asp Asn Arg Ser Leu Phe Ser Leu Asn Glu Val
701 706 711 716

gtg gag ttt agg tgt cag cct ggc ttt gtc atg aaa gga ccc cgc cgt 2208
Val Glu Phe Arg Cys Gln Pro Gly Phe Val Met Lys Gly Pro Arg Arg
717 722 727 732

gtg aag tgc cag gcc ctg aac aaa tgg gag ccg gag cta cca agc tgc 2256
Val Lys Cys Gln Ala Leu Asn Lys Trp Glu Pro Glu Leu Pro Ser Cys
733 738 743 748

tcc agg gta tgt cag cca cct cca gat gtc ctg cat gct gag cgt acc 2304
Ser Arg Val Cys Gln Pro Pro Pro Asp Val Leu His Ala Glu Arg Thr
749 754 759 764

caa agg gac aag gac aac ttt tca ccc ggg cag gaa gtg ttc tac agc 2352
Gln Arg Asp Lys Asp Asn Phe Ser Pro Gly Gln Glu Val Phe Tyr Ser
765 770 775 780

tgt gag ccc ggc tat gac ctc aga ggg gct gcg tct atg cgc tgc aca 2400
Cys Glu Pro Gly Tyr Asp Leu Arg Gly Ala Ala Ser Met Arg Cys Thr
781 786 791 796

ccc cag gga gac tgg agc cct gca gcc ccc aca tgt gaa gtg aaa tcc 2448

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Pro Gln Gly Asp Trp Ser Pro Ala Ala Pro Thr Cys Glu Val Lys Ser
797                 802                 807                 812

tgt gat gac ttc atg ggc caa ctt ctt aat ggc cgt gtg cta ttt cca      2496
Cys Asp Asp Phe Met Gly Gln Leu Leu Asn Gly Arg Val Leu Phe Pro
813                 818                 823                 828

gta aat ctc cag ctt gga gca aaa gtg gat ttt gtt tgt gat gaa gga      2544
Val Asn Leu Gln Leu Gly Ala Lys Val Asp Phe Val Cys Asp Glu Gly
829                 834                 839                 844

ttt caa tta aaa ggc agc tct gct agt tat tgt gtc ttg gct gga atg      2592
Phe Gln Leu Lys Gly Ser Ser Ala Ser Tyr Cys Val Leu Ala Gly Met
845                 850                 855                 860

gaa agc ctt tgg aat agc agt gtt cca gtg tgt gaa caa atc ttt tgt      2640
Glu Ser Leu Trp Asn Ser Ser Val Pro Val Cys Glu Gln Ile Phe Cys
861                 866                 871                 876

cca agt cct cca gtt att cct aat ggg aga cac aca gga aaa cct ctg      2688
Pro Ser Pro Pro Val Ile Pro Asn Gly Arg His Thr Gly Lys Pro Leu
877                 882                 887                 892

gaa gtc ttt ccc ttt gga aaa gca gta aat tac aca tgc gac ccc cac      2736
Glu Val Phe Pro Phe Gly Lys Ala Val Asn Tyr Thr Cys Asp Pro His
893                 898                 903                 908

cca gac aga ggg acg agc ttc gac ctc att gga gag agc acc atc cgc      2784
Pro Asp Arg Gly Thr Ser Phe Asp Leu Ile Gly Glu Ser Thr Ile Arg
909                 914                 919                 924

tgc aca agt gac cct caa ggg aat ggg gtt tgg agc agc cct gcc cct      2832
Cys Thr Ser Asp Pro Gln Gly Asn Gly Val Trp Ser Ser Pro Ala Pro
925                 930                 935                 940

cgc tgt gga att ctg ggt cac tgt caa gcc cca gat cat ttt ctg ttt      2880
Arg Cys Gly Ile Leu Gly His Cys Gln Ala Pro Asp His Phe Leu Phe
941                 946                 951                 956

gcc aag ttg aaa acc caa acc aat gca tct gac ttt ccc att ggg aca      2928
Ala Lys Leu Lys Thr Gln Thr Asn Ala Ser Asp Phe Pro Ile Gly Thr
957                 962                 967                 972

tct tta aag tac gaa tgc cgt cct gag tac tac ggg agg cca ttc tct      2976
Ser Leu Lys Tyr Glu Cys Arg Pro Glu Tyr Tyr Gly Arg Pro Phe Ser
973                 978                 983                 988

atc aca tgt cta gat aac ctg gtc tgg tca agt ccc aaa gat gtc tgt      3024
Ile Thr Cys Leu Asp Asn Leu Val Trp Ser Ser Pro Lys Asp Val Cys
989                 994                 999                1004

aaa cgt aaa tca tgt aaa act cct cca gat cca gtg aat ggc atg gtg      3072
Lys Arg Lys Ser Cys Lys Thr Pro Pro Asp Pro Val Asn Gly Met Val
1005               1010                1015                1020

cat gtg atc aca gac atc cag gtt gga tcc aga atc aac tat tct tgt      3120
His Val Ile Thr Asp Ile Gln Val Gly Ser Arg Ile Asn Tyr Ser Cys
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1021                 1026                 1031                 1036

act aca ggg cac cga ctc att ggt cac tca tct gct gaa tgt atc ctc      3168
Thr Thr Gly His Arg Leu Ile Gly His Ser Ser Ala Glu Cys Ile Leu
1037                1042                1047                1052

tca ggc aat act gcc cat tgg agc acg aag ccg cca att tgt caa cga      3216
Ser Gly Asn Thr Ala His Trp Ser Thr Lys Pro Pro Ile Cys Gln Arg
1053                1058                1063                1068

att cct tgt ggg cta ccc cca acc atc gcc aat gga gat ttc att agc      3264
Ile Pro Cys Gly Leu Pro Pro Thr Ile Ala Asn Gly Asp Phe Ile Ser
1069                1074                1079                1084

acc aac aga gag aat ttt cac tat gga tca gtg gtg acc tac cgc tgc      3312
Thr Asn Arg Glu Asn Phe His Tyr Gly Ser Val Val Thr Tyr Arg Cys
1085                1090                1095                1100

aat ctt gga agc aga ggg aga aag gtg ttt gag ctt gtg ggt gag ccc      3360
Asn Leu Gly Ser Arg Gly Arg Lys Val Phe Glu Leu Val Gly Glu Pro
1101                1106                1111                1116

tcc ata tac tgc acc agc aat gac gat caa gtg ggc atc tgg agc ggc      3408
Ser Ile Tyr Cys Thr Ser Asn Asp Asp Gln Val Gly Ile Trp Ser Gly
1117                1122                1127                1132

ccc gcc cct cag tgc att ata cct aac aaa tgc acg cct cca aat gtg      3456
Pro Ala Pro Gln Cys Ile Ile Pro Asn Lys Cys Thr Pro Pro Asn Val
1133                1138                1143                1148

gaa aat gga ata ttg gta tct gac aac aga agc tta ttt tcc tta aat      3504
Glu Asn Gly Ile Leu Val Ser Asp Asn Arg Ser Leu Phe Ser Leu Asn
1149                1154                1159                1164

gaa gtt gtg gag ttt agg tgt cag cct ggc ttt gtc atg aaa gga ccc      3552
Glu Val Val Glu Phe Arg Cys Gln Pro Gly Phe Val Met Lys Gly Pro
1165                1170                1175                1180

cgc cgt gtg aag tgc cag gcc ctg aac aaa tgg gag cca gag tta cca      3600
Arg Arg Val Lys Cys Gln Ala Leu Asn Lys Trp Glu Pro Glu Leu Pro
1181                1186                1191                1196

agc tgc tcc agg gtg tgt cag ccg cct cca gaa atc ctg cat ggt gag      3648
Ser Cys Ser Arg Val Cys Gln Pro Pro Pro Glu Ile Leu His Gly Glu
1197                1202                1207                1212

cat acc cca agc cat cag gac aac ttt tca cct ggg cag gaa gtg ttc      3696
His Thr Pro Ser His Gln Asp Asn Phe Ser Pro Gly Gln Glu Val Phe
1213                1218                1223                1228

tac agc tgt gag cct ggc tat gac ctc aga ggg gct gcg tct ctg cac      3744
Tyr Ser Cys Glu Pro Gly Tyr Asp Leu Arg Gly Ala Ala Ser Leu His
1229                1234                1239                1244

tgc aca ccc cag gga gac tgg agc cct gaa gcc ccg aga tgt gca gtg      3792
Cys Thr Pro Gln Gly Asp Trp Ser Pro Glu Ala Pro Arg Cys Ala Val
1245                1250                1255                1260
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 aaa tcc tgt gat gac ttc ttg ggt caa ctc cct cat ggc cgt gtg cta      3840
 Lys Ser Cys Asp Asp Phe Leu Gly Gln Leu Pro His Gly Arg Val Leu
1261                1266                1271                1276

 ttt cca ctt aat ctc cag ctt ggg gca aag gtg tcc ttt gtc tgt gat      3888
 Phe Pro Leu Asn Leu Gln Leu Gly Ala Lys Val Ser Phe Val Cys Asp
1277                1282                1287                1292

 gaa ggg ttt cgc tta aag ggc agt tcc gtt agt cat tgt gtc ttg gtt      3936
 Glu Gly Phe Arg Leu Lys Gly Ser Ser Val Ser His Cys Val Leu Val
1293                1298                1303                1308

 gga atg aga agc ctt tgg aat aac agt gtt cct gtg tgt gaa cat atc      3984
 Gly Met Arg Ser Leu Trp Asn Asn Ser Val Pro Val Cys Glu His Ile
1309                1314                1319                1324

 ttt tgt cca aat cct cca gct atc ctt aat ggg aga cac aca gga act      4032
 Phe Cys Pro Asn Pro Pro Ala Ile Leu Asn Gly Arg His Thr Gly Thr
1325                1330                1335                1340

 ccc tct gga gat att ccc tat gga aaa gaa ata tct tac aca tgt gac      4080
 Pro Ser Gly Asp Ile Pro Tyr Gly Lys Glu Ile Ser Tyr Thr Cys Asp
1341                1346                1351                1356

 ccc cac cca gac aga ggg atg acc ttc aac ctc att ggg gag agc acc      4128
 Pro His Pro Asp Arg Gly Met Thr Phe Asn Leu Ile Gly Glu Ser Thr
1357                1362                1367                1372

 atc cgc tgc aca agt gac cct cat ggg aat ggg gtt tgg agc agc cct      4176
 Ile Arg Cys Thr Ser Asp Pro His Gly Asn Gly Val Trp Ser Ser Pro
1373                1378                1383                1388

 gcc cct cgc tgt gaa ctt tct gtt cgt gct ggt cac tgt aaa acc cca      4224
 Ala Pro Arg Cys Glu Leu Ser Val Arg Ala Gly His Cys Lys Thr Pro
1389                1394                1399                1404

 gag cag ttt cca ttt gcc agt cct acg atc cca att aat gac ttt gag      4272
 Glu Gln Phe Pro Phe Ala Ser Pro Thr Ile Pro Ile Asn Asp Phe Glu
1405                1410                1415                1420

 ttt cca gtc ggg aca tct ttg aat tat gaa tgc cgt cct ggg tat ttt      4320
 Phe Pro Val Gly Thr Ser Leu Asn Tyr Glu Cys Arg Pro Gly Tyr Phe
1421                1426                1431                1436

 ggg aaa atg ttc tct atc tcc tgc cta gaa aac ttg gtc tgg tca agt      4368
 Gly Lys Met Phe Ser Ile Ser Cys Leu Glu Asn Leu Val Trp Ser Ser
1437                1442                1447                1452

 gtt gaa gac aac tgt aga cga aaa tca tgt gga cct cca cca gaa ccc      4416
 Val Glu Asp Asn Cys Arg Arg Lys Ser Cys Gly Pro Pro Pro Glu Pro
1453                1458                1463                1468

 ttc aat gga atg gtg cat ata aac aca gat aca cag ttt gga tca aca      4464
 Phe Asn Gly Met Val His Ile Asn Thr Asp Thr Gln Phe Gly Ser Thr
1469                1474                1479                1484
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gtt aat tat tct tgt aat gaa ggg ttt cga ctc att ggt tcc cca tct      4512
Val Asn Tyr Ser Cys Asn Glu Gly Phe Arg Leu Ile Gly Ser Pro Ser
1485                1490                1495                1500

act act tgt ctc gtc tca ggc aat aat gtc aca tgg gat aag aag gca      4560
Thr Thr Cys Leu Val Ser Gly Asn Asn Val Thr Trp Asp Lys Lys Ala
1501                1506                1511                1516

cct att tgt gag atc ata tct tgt gag cca cct cca acc ata tcc aat      4608
Pro Ile Cys Glu Ile Ile Ser Cys Glu Pro Pro Pro Thr Ile Ser Asn
1517                1522                1527                1532

gga gac ttc tac agc aac aat aga aca tct ttt cac aat gga acg gtg      4656
Gly Asp Phe Tyr Ser Asn Asn Arg Thr Ser Phe His Asn Gly Thr Val
1533                1538                1543                1548

gta act tac cag tgc cac act gga cca gat gga gaa cag ctg ttt gag      4704
Val Thr Tyr Gln Cys His Thr Gly Pro Asp Gly Glu Gln Leu Phe Glu
1549                1554                1559                1564

ctt gtg gga gaa cgg tca ata tat tgc acc agc aaa gat gat caa gtt      4752
Leu Val Gly Glu Arg Ser Ile Tyr Cys Thr Ser Lys Asp Asp Gln Val
1565                1570                1575                1580

ggt gtt tgg agc agc cct ccc cct cgg tgt att tct act aat aaa tgc      4800
Gly Val Trp Ser Ser Pro Pro Pro Arg Cys Ile Ser Thr Asn Lys Cys
1581                1586                1591                1596

aca gct cca gaa gtt gaa aat gca att aga gta cca gga aac agg agt      4848
Thr Ala Pro Glu Val Glu Asn Ala Ile Arg Val Pro Gly Asn Arg Ser
1597                1602                1607                1612

ttc ttt tcc ctc act gag atc atc aga ttt aga tgt cag ccc ggg ttt      4896
Phe Phe Ser Leu Thr Glu Ile Ile Arg Phe Arg Cys Gln Pro Gly Phe
1613                1618                1623                1628

gtc atg gta ggg tcc cac act gtg cag tgc cag acc aat ggc aga tgg      4944
Val Met Val Gly Ser His Thr Val Gln Cys Gln Thr Asn Gly Arg Trp
1629                1634                1639                1644

ggg ccc aag ctg cca cac tgc tcc agg gtg tgt cag ccg cct cca gaa      4992
Gly Pro Lys Leu Pro His Cys Ser Arg Val Cys Gln Pro Pro Pro Glu
1645                1650                1655                1660

atc ctg cat ggt gag cat acc cta agc cat cag gac aac ttt tca cct      5040
Ile Leu His Gly Glu His Thr Leu Ser His Gln Asp Asn Phe Ser Pro
1661                1666                1671                1676

ggg cag gaa gtg ttc tac agc tgt gag ccc agc tat gac ctc aga ggg      5088
Gly Gln Glu Val Phe Tyr Ser Cys Glu Pro Ser Tyr Asp Leu Arg Gly
1677                1682                1687                1692

gct gcg tct ctg cac tgc acg ccc cag gga gac tgg agc cct gaa gcc      5136
Ala Ala Ser Leu His Cys Thr Pro Gln Gly Asp Trp Ser Pro Glu Ala
1693                1698                1703                1708

cct aga tgt aca gtg aaa tcc tgt gat gac ttc ctg ggc caa ctc cct      5184
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 Pro Arg Cys Thr Val Lys Ser Cys Asp Asp Phe Leu Gly Gln Leu Pro
1709                1714                1719                1724

 cat ggc cgt gtg cta ctt cca ctt aat ctc cag ctt ggg gca aag gtg      5232
 His Gly Arg Val Leu Leu Pro Leu Asn Leu Gln Leu Gly Ala Lys Val
1725                1730                1735                1740

 tcc ttt gtt tgc gat gaa ggg ttc cga tta aaa ggc agg tct gct agt      5280
 Ser Phe Val Cys Asp Glu Gly Phe Arg Leu Lys Gly Arg Ser Ala Ser
1741                1746                1751                1756

 cat tgt gtc ttg gct gga atg aaa gcc ctt tgg aat agc agt gtt cca      5328
 His Cys Val Leu Ala Gly Met Lys Ala Leu Trp Asn Ser Ser Val Pro
1757                1762                1767                1772

 gtg tgt gaa caa atc ttt tgt cca aat cct cca gct atc ctt aat ggg      5376
 Val Cys Glu Gln Ile Phe Cys Pro Asn Pro Pro Ala Ile Leu Asn Gly
1773                1778                1783                1788

 aga cac aca gga act ccc ttt gga gat att ccc tat gga aaa gaa ata      5424
 Arg His Thr Gly Thr Pro Phe Gly Asp Ile Pro Tyr Gly Lys Glu Ile
1789                1794                1799                1804

 tct tac gca tgc gac acc cac cca gac aga ggg atg acc ttc aac ctc      5472
 Ser Tyr Ala Cys Asp Thr His Pro Asp Arg Gly Met Thr Phe Asn Leu
1805                1810                1815                1820

 att ggg gag agc tcc atc cgc tgc aca agt gac cct caa ggg aat ggg      5520
 Ile Gly Glu Ser Ser Ile Arg Cys Thr Ser Asp Pro Gln Gly Asn Gly
1821                1826                1831                1836

 gtt tgg agc agc cct gcc cct cgc tgt gaa ctt tct gtt cct gct gcc      5568
 Val Trp Ser Ser Pro Ala Pro Arg Cys Glu Leu Ser Val Pro Ala Ala
1837                1842                1847                1852

 tgc cca cat cca ccc aag atc caa aac ggg cat tac att gga gga cac      5616
 Cys Pro His Pro Pro Lys Ile Gln Asn Gly His Tyr Ile Gly Gly His
1853                1858                1863                1868

 gta tct cta tat ctt cct ggg atg aca atc agc tac act tgt gac ccc      5664
 Val Ser Leu Tyr Leu Pro Gly Met Thr Ile Ser Tyr Thr Cys Asp Pro
1869                1874                1879                1884

 ggc tac ctg tta gtg gga aag ggc ttc att ttc tgt aca gac cag gga      5712
 Gly Tyr Leu Leu Val Gly Lys Gly Phe Ile Phe Cys Thr Asp Gln Gly
1885                1890                1895                1900

 atc tgg agc caa ttg gat cat tat tgc aaa gaa gta aat tgt agc ttc      5760
 Ile Trp Ser Gln Leu Asp His Tyr Cys Lys Glu Val Asn Cys Ser Phe
1901                1906                1911                1916

 cca ctg ttt atg aat gga atc tcg aag gag tta gaa atg aaa aaa gta      5808
 Pro Leu Phe Met Asn Gly Ile Ser Lys Glu Leu Glu Met Lys Lys Val
1917                1922                1927                1932

 tat cac tat gga gat tat gtg act ttg aag tgt gaa gat ggg tat act      5856
 Tyr His Tyr Gly Asp Tyr Val Thr Leu Lys Cys Glu Asp Gly Tyr Thr
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1933                1938                1943                1948

 ctg gaa ggc agt ccc tgg agc cag tgc cag gcg gat gac aga tgg gac      5904
 Leu Glu Gly Ser Pro Trp Ser Gln Cys Gln Ala Asp Asp Arg Trp Asp
1949                1954                1959                1964

 cct cct ctg gcc aaa tgt acc tct cgt gca cat gat gct ctc ata gtt      5952
 Pro Pro Leu Ala Lys Cys Thr Ser Arg Ala His Asp Ala Leu Ile Val
1965                1970                1975                1980

 ggc act tta tct ggt acg atc ttc ttt att tta ctc atc att ttc ctc      6000
 Gly Thr Leu Ser Gly Thr Ile Phe Phe Ile Leu Leu Ile Ile Phe Leu
1981                1986                1991                1996

 tct tgg ata att cta aag cac aga aaa ggc aat aat gca cat gaa aac      6048
 Ser Trp Ile Ile Leu Lys His Arg Lys Gly Asn Asn Ala His Glu Asn
1997                2002                2007                2012

 cct aaa gaa gtg gct atc cat tta cat tct caa gga ggc agc agc gtt      6096
 Pro Lys Glu Val Ala Ile His Leu His Ser Gln Gly Gly Ser Ser Val
2013                2018                2023                2028

 cat ccc cga act ctg caa aca aat gaa gaa aat agc agg gtc ctt cct      6144
 His Pro Arg Thr Leu Gln Thr Asn Glu Glu Asn Ser Arg Val Leu Pro
2029                2034                2039                2044

 tga caaa gtactataca gctgaagaac atctcgaata caattttggt gggaaaggag      6201
  *
2045

 ccaattgatt tcaacagaat cagatctgag cttcataaag tctttgaagt gacttcacag   6261

 agacgcagac atgtgcactt gaagatgctg ccccttccct ggtacctagc aaagctcctg   6321

 cctctttgtg tgcgtcactg tgaaaccccc acccttctgc ctcgtgctaa acgcacacag   6381

 tatctagtca ggggaaaaga ctgcatttag gagatagaaa atagtttgga ttacttaaag   6441

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 tttgtaatat ggaatgggct cagtaagaag agcttggaaa atgcagaaag ttatgaaaaa   6561

 taagtcactt ataattatgc tacctactga taaccactcc taatattttg attcattttc   6621

 tgcctatctt ctttcacatg tgttttttta catacgtact ttccccctt agtttgtttc    6681

 cttttatttt atagagcaga accctagtct tttaaacagt ttagagtgaa atatatgcta   6741

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catattctaa acatcagaaa acaacaaata cattgtagtt ctgttcaaat ttctacttct   7221

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   1               5                  10

gga gtg atg gtg ttt gta cat gct cga aat gcc act gta aga aca gct      96
Gly Val Met Val Phe Val His Ala Arg Asn Ala Thr Val Arg Thr Ala
 17                  22                  27                  32

atg tct cta ata gaa aga gca aaa aat tgt ggc cat att ccc ttc ttt     144
Met Ser Leu Ile Glu Arg Ala Lys Asn Cys Gly His Ile Pro Phe Phe
 33                  38                  43                  48

ttt cct acc caa gga cat gac tat gta ctt gca gaa aaa cag gta caa     192
Phe Pro Thr Gln Gly His Asp Tyr Val Leu Ala Glu Lys Gln Val Gln
 49                  54                  59                  64

agg tcg aga aat aag caa gta cga gaa tta ttc cca gat ggt ttt agt     240
Arg Ser Arg Asn Lys Gln Val Arg Glu Leu Phe Pro Asp Gly Phe Ser
 65                  70                  75                  80

att cat cat gca gga atg ctt cgg cag gac aga aat tta gtt gaa aac     288
Ile His His Ala Gly Met Leu Arg Gln Asp Arg Asn Leu Val Glu Asn
 81                  86                  91                  96

ttg ttt tct aat ggg cat atc aaa gtc cta gtg tgt aca gct acg tta     336
Leu Phe Ser Asn Gly His Ile Lys Val Leu Val Cys Thr Ala Thr Leu
 97                 102                 107                 112

gcc tgg ggt gtc aat ctt ccc gcc cat gct gtt att att aag gga aca     384
Ala Trp Gly Val Asn Leu Pro Ala His Ala Val Ile Ile Lys Gly Thr
113                 118                 123                 128

caa ata tat gct gca aaa aga ggc tcc ttt gtt gac ctt gga att tta     432
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Gln Ile Tyr Ala Ala Lys Arg Gly Ser Phe Val Asp Leu Gly Ile Leu
129                 134                 139                 144

gat gtc atg cag ata ttt ggt cga gct gga cga cca caa ttt gac aaa      480
Asp Val Met Gln Ile Phe Gly Arg Ala Gly Arg Pro Gln Phe Asp Lys
145                 150                 155                 160

ttt ggg gaa gga ata att ata aca acg cat gat aaa ctc agc cat tac      528
Phe Gly Glu Gly Ile Ile Ile Thr Thr His Asp Lys Leu Ser His Tyr
161                 166                 171                 176

ctc act ttg ctc act caa cga aac cca att gag agt cag ttt ctg gaa      576
Leu Thr Leu Leu Thr Gln Arg Asn Pro Ile Glu Ser Gln Phe Leu Glu
177                 182                 187                 192

agc ctt gca gat aac cta aat gca gag att gct ctg gga aca gtt act      624
Ser Leu Ala Asp Asn Leu Asn Ala Glu Ile Ala Leu Gly Thr Val Thr
193                 198                 203                 208

aat gtg gaa gaa gca gtg aag tgg ata agt tac act tat ctt tat gta      672
Asn Val Glu Glu Ala Val Lys Trp Ile Ser Tyr Thr Tyr Leu Tyr Val
209                 214                 219                 224

cgg atg aga gca aat cca tta gca tat ggc atc agt cac aag gct tat      720
Arg Met Arg Ala Asn Pro Leu Ala Tyr Gly Ile Ser His Lys Ala Tyr
225                 230                 235                 240

cag att gac cca aca tta aga aag cat cga gaa cag ttg gtc att gaa      768
Gln Ile Asp Pro Thr Leu Arg Lys His Arg Glu Gln Leu Val Ile Glu
241                 246                 251                 256

gtt gga cga aaa cta gac aaa gct cag atg att cgt ttt gag gag cga      816
Val Gly Arg Lys Leu Asp Lys Ala Gln Met Ile Arg Phe Glu Glu Arg
257                 262                 267                 272

act gga tat ttt tcc tca act gat ttg ggt aga act gcc agc cat tac      864
Thr Gly Tyr Phe Ser Ser Thr Asp Leu Gly Arg Thr Ala Ser His Tyr
273                 278                 283                 288

tat att aaa tac aac acc att gag acc ttt aat gaa ctc ttt gat gct      912
Tyr Ile Lys Tyr Asn Thr Ile Glu Thr Phe Asn Glu Leu Phe Asp Ala
289                 294                 299                 304

cac aaa aca gaa ggt gat atc ttt gcc ata gtc tcc aaa gct gaa gaa      960
His Lys Thr Glu Gly Asp Ile Phe Ala Ile Val Ser Lys Ala Glu Glu
305                 310                 315                 320

ttt gat caa att aag gtc aga gaa gag gaa ata gag gag tta gat acc     1008
Phe Asp Gln Ile Lys Val Arg Glu Glu Glu Ile Glu Glu Leu Asp Thr
321                 326                 331                 336

tta tta agc aat ttt tgt gaa ctc tcc act cct gga ggt gta gag aat     1056
Leu Leu Ser Asn Phe Cys Glu Leu Ser Thr Pro Gly Gly Val Glu Asn
337                 342                 347                 352

agt tat ggg aaa ata aac atc tta ctt caa act tat atc agc cga gga     1104
Ser Tyr Gly Lys Ile Asn Ile Leu Leu Gln Thr Tyr Ile Ser Arg Gly
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353                 358                 363                 368

gaa atg gac agt ttc tcc ctt ata tca gat tct gca tat gtt gca cag      1152
Glu Met Asp Ser Phe Ser Leu Ile Ser Asp Ser Ala Tyr Val Ala Gln
369                 374                 379                 384

aat gca gct aga att gtc cgt gct ctt ttt gaa att gct ctg agg aaa      1200
Asn Ala Ala Arg Ile Val Arg Ala Leu Phe Glu Ile Ala Leu Arg Lys
385                 390                 395                 400

cgt tgg cct acc atg acc tac agg ctc ctg aat ctt agt aaa gtc att      1248
Arg Trp Pro Thr Met Thr Tyr Arg Leu Leu Asn Leu Ser Lys Val Ile
401                 406                 411                 416

gac aag agg ctt tgg ggt tgg gct agc cct ttg aga caa ttt tca atc      1296
Asp Lys Arg Leu Trp Gly Trp Ala Ser Pro Leu Arg Gln Phe Ser Ile
417                 422                 427                 432

cta cca cca cac atc cta aca aga tta gaa gaa aaa aag ctt act gtg      1344
Leu Pro Pro His Ile Leu Thr Arg Leu Glu Glu Lys Lys Leu Thr Val
433                 438                 443                 448

gat aag ctg aaa gac atg agg aaa gat gaa ata ggt cac att tta cat      1392
Asp Lys Leu Lys Asp Met Arg Lys Asp Glu Ile Gly His Ile Leu His
449                 454                 459                 464

cat gtg aat att gga ctg aag gtc aaa caa tgt gtt cat cag att cct      1440
His Val Asn Ile Gly Leu Lys Val Lys Gln Cys Val His Gln Ile Pro
465                 470                 475                 480

tct gtt atg atg gaa gca ttc att cag cct atc aca agg act gtc ctc      1488
Ser Val Met Met Glu Ala Phe Ile Gln Pro Ile Thr Arg Thr Val Leu
481                 486                 491                 496

cga gtg aca ctc agc atc tat gct gat ttc act tgg aat gat cag gta      1536
Arg Val Thr Leu Ser Ile Tyr Ala Asp Phe Thr Trp Asn Asp Gln Val
497                 502                 507                 512

cat ggg aca gta gga gaa cct tgg tgg att tgg gta gaa gat cct aca      1584
His Gly Thr Val Gly Glu Pro Trp Trp Ile Trp Val Glu Asp Pro Thr
513                 518                 523                 528

aat gat cat att tat cat tca gag tat ttt cta gct cta aaa aaa caa      1632
Asn Asp His Ile Tyr His Ser Glu Tyr Phe Leu Ala Leu Lys Lys Gln
529                 534                 539                 544

gtc att agt aaa gaa gcc caa cta ctg gta ttt aca atc cct att ttt      1680
Val Ile Ser Lys Glu Ala Gln Leu Leu Val Phe Thr Ile Pro Ile Phe
545                 550                 555                 560

gag cct ttg cct tcc caa tac tac atc cga gca gtg tct gat aga tgg      1728
Glu Pro Leu Pro Ser Gln Tyr Tyr Ile Arg Ala Val Ser Asp Arg Trp
561                 566                 571                 576

ttg ggt gct gag gca gta tgt att atc aac ttt caa cat cta att cta      1776
Leu Gly Ala Glu Ala Val Cys Ile Ile Asn Phe Gln His Leu Ile Leu
577                 582                 587                 592
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cca gag aga cat cct cct cat aca gaa tta ctg gat ctt cag cct tta      1824
Pro Glu Arg His Pro Pro His Thr Glu Leu Leu Asp Leu Gln Pro Leu
593                 598                 603                 608

cca atc aca gct ttg gga tgt aaa gca tat gaa gcc ctg tac aac ttc      1872
Pro Ile Thr Ala Leu Gly Cys Lys Ala Tyr Glu Ala Leu Tyr Asn Phe
609                 614                 619                 624

agc cac ttt aac cct gta cag aca caa ata ttt cat aca ttg tat cac      1920
Ser His Phe Asn Pro Val Gln Thr Gln Ile Phe His Thr Leu Tyr His
625                 630                 635                 640

acg gat tgt aat gtc cta ctt gga gca cct act gga tcg gga aag act      1968
Thr Asp Cys Asn Val Leu Leu Gly Ala Pro Thr Gly Ser Gly Lys Thr
641                 646                 651                 656

gtt gca gct gaa tta gcc att ttc aga gtc ttc aac aaa tac cct act      2016
Val Ala Ala Glu Leu Ala Ile Phe Arg Val Phe Asn Lys Tyr Pro Thr
657                 662                 667                 672

tca aag gcg gta tat att gca ccc cta aaa gcc cta gta cgt gaa aga      2064
Ser Lys Ala Val Tyr Ile Ala Pro Leu Lys Ala Leu Val Arg Glu Arg
673                 678                 683                 688

atg gat gat tgg aaa gtt aga ata gaa gaa aaa ctt ggt aaa aaa gtt      2112
Met Asp Asp Trp Lys Val Arg Ile Glu Glu Lys Leu Gly Lys Lys Val
689                 694                 699                 704

att gaa cta aca ggg gat gtg act cct gat atg aaa tcc att gcc aag      2160
Ile Glu Leu Thr Gly Asp Val Thr Pro Asp Met Lys Ser Ile Ala Lys
705                 710                 715                 720

gct gac ctt atc gtc act acg cca gag aag tgg gat gga gtc agc aga      2208
Ala Asp Leu Ile Val Thr Thr Pro Glu Lys Trp Asp Gly Val Ser Arg
721                 726                 731                 736

agc tgg caa aat agg aac tat gtt cag caa gtc act att ctc atc ata      2256
Ser Trp Gln Asn Arg Asn Tyr Val Gln Gln Val Thr Ile Leu Ile Ile
737                 742                 747                 752

gat gag atc cat ctg ctt ggg gag gaa aga ggc cct gtt cta gag gtc      2304
Asp Glu Ile His Leu Leu Gly Glu Glu Arg Gly Pro Val Leu Glu Val
753                 758                 763                 768

att gta tct cga aca aat ttt atc tca tca cac aca gaa aag cct gtt      2352
Ile Val Ser Arg Thr Asn Phe Ile Ser Ser His Thr Glu Lys Pro Val
769                 774                 779                 784

aga ata gtt gga cta tct act gca tta gct aat gcc aga gac ctt gct      2400
Arg Ile Val Gly Leu Ser Thr Ala Leu Ala Asn Ala Arg Asp Leu Ala
785                 790                 795                 800

gat tgg ctc aat att aag cag atg ggc ttg ttt aac ttc cga cca tca      2448
Asp Trp Leu Asn Ile Lys Gln Met Gly Leu Phe Asn Phe Arg Pro Ser
801                 806                 811                 816
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gta cgc cca gtt cca ctg gaa gtt cac att caa ggc ttt cca ggt caa      2496
Val Arg Pro Val Pro Leu Glu Val His Ile Gln Gly Phe Pro Gly Gln
817                 822                 827                 832

cat tac tgt cct cgt atg gct agt atg aac aag cct gca ttt cag gca      2544
His Tyr Cys Pro Arg Met Ala Ser Met Asn Lys Pro Ala Phe Gln Ala
833                 838                 843                 848

att aga agc cat tct cca gcc aaa cct gtt ttg ata ttt gtc tca tca      2592
Ile Arg Ser His Ser Pro Ala Lys Pro Val Leu Ile Phe Val Ser Ser
849                 854                 859                 864

aga cgt caa act cgt ctt act gct ttg gaa ttg atc gcc ttc ctg gct      2640
Arg Arg Gln Thr Arg Leu Thr Ala Leu Glu Leu Ile Ala Phe Leu Ala
865                 870                 875                 880

act gaa gaa gat cca aag cag tgg tta aac atg gat gaa aga gag atg      2688
Thr Glu Glu Asp Pro Lys Gln Trp Leu Asn Met Asp Glu Arg Glu Met
881                 886                 891                 896

gag aac atc att gca aca gta aga gat tcc aac ctc aag ctg acc ctt      2736
Glu Asn Ile Ile Ala Thr Val Arg Asp Ser Asn Leu Lys Leu Thr Leu
897                 902                 907                 912

gct ttc ggg ata gga atg cat cat gct gga cta cat gag agg gac cga      2784
Ala Phe Gly Ile Gly Met His His Ala Gly Leu His Glu Arg Asp Arg
913                 918                 923                 928

aaa aca gta gag gaa cta ttt gta aac tgt aaa gtt cag gtt ctt att      2832
Lys Thr Val Glu Glu Leu Phe Val Asn Cys Lys Val Gln Val Leu Ile
929                 934                 939                 944

gct aca agc aca tta gcc tgg ggt gta aac ttt cca gct cat tta gta      2880
Ala Thr Ser Thr Leu Ala Trp Gly Val Asn Phe Pro Ala His Leu Val
945                 950                 955                 960

att att aag gga aca gaa tac tat gat gga aaa aca aga cgt tat gtg      2928
Ile Ile Lys Gly Thr Glu Tyr Tyr Asp Gly Lys Thr Arg Arg Tyr Val
961                 966                 971                 976

gat ttt ccc att aca gat gtc ctc cag atg atg ggg cgt gct ggg agg      2976
Asp Phe Pro Ile Thr Asp Val Leu Gln Met Met Gly Arg Ala Gly Arg
977                 982                 987                 992

ccg cag ttc gat gac caa ggc aaa gct gta att cta gtt cat gac ata      3024
Pro Gln Phe Asp Asp Gln Gly Lys Ala Val Ile Leu Val His Asp Ile
993                 998                1003                1008

aag aaa gac ttt tat aaa aaa ttt ctt tat gaa cct ttc cca gta gaa      3072
Lys Lys Asp Phe Tyr Lys Lys Phe Leu Tyr Glu Pro Phe Pro Val Glu
1009               1014                1019                1024

tca agt tta tta gga gtg ctc tct gac cac tta aat gca gag att gct      3120
Ser Ser Leu Leu Gly Val Leu Ser Asp His Leu Asn Ala Glu Ile Ala
1025               1030                1035                1040

ggt ggt aca att aca tct aag caa gat gca ttg gat tat atc acc tgg      3168
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Gly Gly Thr Ile Thr Ser Lys Gln Asp Ala Leu Asp Tyr Ile Thr Trp
1041                1046                1051                1056

act tac ttt ttc cga cgt ctt atc atg aat ccc agc tat tac aat ttg      3216
Thr Tyr Phe Phe Arg Arg Leu Ile Met Asn Pro Ser Tyr Tyr Asn Leu
1057                1062                1067                1072

ggt gat gtg agc cat gat tct gtg aac aag ttt ctg tcc cat ctg att      3264
Gly Asp Val Ser His Asp Ser Val Asn Lys Phe Leu Ser His Leu Ile
1073                1078                1083                1088

gag aag tcc ctg att gaa ttg gaa ctt tcc tac tgt att gaa att gga      3312
Glu Lys Ser Leu Ile Glu Leu Glu Leu Ser Tyr Cys Ile Glu Ile Gly
1089                1094                1099                1104

gag gat aat cgc agc att gaa cct cta act tat ggc cga att gcc tcc      3360
Glu Asp Asn Arg Ser Ile Glu Pro Leu Thr Tyr Gly Arg Ile Ala Ser
1105                1110                1115                1120

tat tac tat ttg aag cat caa aca gtt aaa atg ttc aag gac cgc ttg      3408
Tyr Tyr Tyr Leu Lys His Gln Thr Val Lys Met Phe Lys Asp Arg Leu
1121                1126                1131                1136

aag cct gaa tgc agt act gaa gaa ctg ctt tca att cta agt gat gca      3456
Lys Pro Glu Cys Ser Thr Glu Glu Leu Leu Ser Ile Leu Ser Asp Ala
1137                1142                1147                1152

gaa gaa tat aca gat ttg cca gtg aga cac aat gaa gat cat atg aat      3504
Glu Glu Tyr Thr Asp Leu Pro Val Arg His Asn Glu Asp His Met Asn
1153                1158                1163                1168

agt gaa ctg gca aaa tgt ctt ccc att gaa tca aat cct cat tca ttt      3552
Ser Glu Leu Ala Lys Cys Leu Pro Ile Glu Ser Asn Pro His Ser Phe
1169                1174                1179                1184

gac agc cct cac acc aaa gca cat ctc ctg cta cag gca cat ctc agc      3600
Asp Ser Pro His Thr Lys Ala His Leu Leu Leu Gln Ala His Leu Ser
1185                1190                1195                1200

cga gcc atg cta ccc tgc cca gat tat gac act gat acc aaa aca gtc      3648
Arg Ala Met Leu Pro Cys Pro Asp Tyr Asp Thr Asp Thr Lys Thr Val
1201                1206                1211                1216

ttg gac caa gct ctc aga gta tgt cag gca atg ctg gac gtg gct gca      3696
Leu Asp Gln Ala Leu Arg Val Cys Gln Ala Met Leu Asp Val Ala Ala
1217                1222                1227                1232

aac cag ggc tgg ctg gtg act gtc ctg aat atc acc aac ctg att cag      3744
Asn Gln Gly Trp Leu Val Thr Val Leu Asn Ile Thr Asn Leu Ile Gln
1233                1238                1243                1248

atg gtg atc cag ggt cgg tgg tta aag gac tct tct ctt ctt aca cta      3792
Met Val Ile Gln Gly Arg Trp Leu Lys Asp Ser Ser Leu Leu Thr Leu
1249                1254                1259                1264

cca aac ata gaa aac cat cat ctt cac ctt ttc aag aaa tgg aag ccg      3840
Pro Asn Ile Glu Asn His His Leu His Leu Phe Lys Lys Trp Lys Pro
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1265                1270                1275                1280

att atg aag ggc cca cat gct agg ggt cgg act tcc atc gag tgc ctt      3888
Ile Met Lys Gly Pro His Ala Arg Gly Arg Thr Ser Ile Glu Cys Leu
1281                1286                1291                1296

cct gaa ctg atc cat gcc tgt gga ggg aaa gac cat gta ttt agc tcc      3936
Pro Glu Leu Ile His Ala Cys Gly Gly Lys Asp His Val Phe Ser Ser
1297                1302                1307                1312

atg gta gaa agt gag cta cat gct gca aaa acg aaa cag gca tgg aat      3984
Met Val Glu Ser Glu Leu His Ala Ala Lys Thr Lys Gln Ala Trp Asn
1313                1318                1323                1328

ttc tta tct cac ttg cca gtg ata aat gtt ggc ata agt gtt aaa ggc      4032
Phe Leu Ser His Leu Pro Val Ile Asn Val Gly Ile Ser Val Lys Gly
1329                1334                1339                1344

tcg tgg gat gac tta gtt gaa gga cat aat gaa ctc tct gtc tca act      4080
Ser Trp Asp Asp Leu Val Glu Gly His Asn Glu Leu Ser Val Ser Thr
1345                1350                1355                1360

ctg act gca gac aaa cga gat gac aac aaa tgg atc aaa ttg cat gct      4128
Leu Thr Ala Asp Lys Arg Asp Asp Asn Lys Trp Ile Lys Leu His Ala
1361                1366                1371                1376

gac caa gag tat gtg ctt caa gtg agc ttg cag aga gtc cac ttt ggg      4176
Asp Gln Glu Tyr Val Leu Gln Val Ser Leu Gln Arg Val His Phe Gly
1377                1382                1387                1392

ttc cac aag gga aag cca gag agc tgt gca gtt act cct cga ttt ccc      4224
Phe His Lys Gly Lys Pro Glu Ser Cys Ala Val Thr Pro Arg Phe Pro
1393                1398                1403                1408

aaa tca aaa gac gaa gga tgg ttt ttg ata tta gga gaa gtg gat aag      4272
Lys Ser Lys Asp Glu Gly Trp Phe Leu Ile Leu Gly Glu Val Asp Lys
1409                1414                1419                1424

aga gaa ctt att gct ttg aaa aga gta gga tat att cga aat cat cat      4320
Arg Glu Leu Ile Ala Leu Lys Arg Val Gly Tyr Ile Arg Asn His His
1425                1430                1435                1440

gtt gct tcc ctt tct ttt tat acc cct gaa ata cct gga agg tat atc      4368
Val Ala Ser Leu Ser Phe Tyr Thr Pro Glu Ile Pro Gly Arg Tyr Ile
1441                1446                1451                1456

tac aca tta tat ttc atg agt gac tgc tac ctt ggc ctg gac cag cag      4416
Tyr Thr Leu Tyr Phe Met Ser Asp Cys Tyr Leu Gly Leu Asp Gln Gln
1457                1462                1467                1472

tat gac aat cta tct caa cgt tac aca agc gag tct ttc tgc aca ggt      4464
Tyr Asp Asn Leu Ser Gln Arg Tyr Thr Ser Glu Ser Phe Cys Thr Gly
1473                1478                1483                1488

caa cac caa ggt ctc tga ttccct gactgacctg gcattaaagt aacttgacct      4518
Gln His Gln Gly Leu  *
1489                1494
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gaacaatcca tttgaaagga gtggctaaga attctctctg ttcagtcatc tagacaaatc   4578
gaattacttg atgtttgcct tgaaagaatc aacttctaac ctcaaccatc caggaaattg   4638
acagtggctg cagtattgac tccagtgaca taaagttaac cacagtggcc ttttaacaaa   4698
tgttgccttt tataatgtta tctttatgag tttcttgata tgtaagatga aaaagcattt   4758
agaataatct tttaatttgt gtatatttgg gatgatattt aggagctatc aatcaaattt   4818
tacatctcac aatgtactgt ttacatggat attggctgct ttttttaagg aaaaccacat   4878
tgagatgtga caagtgttag gacttgtcac agatttctaa ctctgccgca taaactataa   4938
atctgtaagg tggtacacag cgtgtcttgt tagcaaaatt tatactttga tatgatcaca   4998
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attatattat ggagcctaat gatgataaca aagaaaacaa tatactgatc ttagaaaatg   5118
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gttttctttc tgcttccctt taaataatat ccccttactc atctgttctt cttttctttc   5238
ccttctactt caaggcttta tttctattat ctttctgaca tatttattta cagaagtaga   5298
gaagtataat ctaattcatg ttgtagcact tacagatcat atagtacaat tatttgtctt   5358
tatgctctcc aggaaaaatc tgagacagaa aatttttcac ccctatggat aggatttcgc   5418
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                                                     Met Ala Ala
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gcc gag gga ccg gtg ggc gac ggc gag ctg tgg cag acc tgg ctt cct      105
Ala Glu Gly Pro Val Gly Asp Gly Glu Leu Trp Gln Thr Trp Leu Pro
  4                   9                  14                  19

aac cac gtc gtg ttc ttg cgg ctc cgg gag gga ctg aaa aac cag agt      153
Asn His Val Val Phe Leu Arg Leu Arg Glu Gly Leu Lys Asn Gln Ser
 20                  25                  30                  35
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cca acc gaa gct gag aaa cca gct tct tcg tcg ttg cct tcg tcg ccg      201
Pro Thr Glu Ala Glu Lys Pro Ala Ser Ser Ser Leu Pro Ser Ser Pro
 36                 41                  46                  51

ccg ccg cag ttg ctg acg aga aac gtg gtc ttt ggc ctc ggc gga gag      249
Pro Pro Gln Leu Leu Thr Arg Asn Val Val Phe Gly Leu Gly Gly Glu
 52                 57                  62                  67

ctt ttc ctg tgg gac gga gaa gac agc tcc ttc tta gtc gtt cgc ctt      297
Leu Phe Leu Trp Asp Gly Glu Asp Ser Ser Phe Leu Val Val Arg Leu
 68                 73                  78                  83

cgg ggc ccc agc ggc ggc ggc gaa gag ccc gcc ctg tcc cag tac cag      345
Arg Gly Pro Ser Gly Gly Gly Glu Glu Pro Ala Leu Ser Gln Tyr Gln
 84                 89                  94                  99

aga ttg ctt tgc ata aat cca ccc ctg ttt gaa atc tat caa gtc ttg      393
Arg Leu Leu Cys Ile Asn Pro Pro Leu Phe Glu Ile Tyr Gln Val Leu
100                105                 110                 115

tta agc cca aca caa cat cat gta gca ctt ata gga ata aaa gga ctt      441
Leu Ser Pro Thr Gln His His Val Ala Leu Ile Gly Ile Lys Gly Leu
116                121                 126                 131

atg gta tta gaa tta cct aaa aga tgg ggg aag aat tct gaa ttt gaa      489
Met Val Leu Glu Leu Pro Lys Arg Trp Gly Lys Asn Ser Glu Phe Glu
132                137                 142                 147

ggt gga aaa tca aca gtg aat tgt agt acc act cca gtt gcg gag aga      537
Gly Gly Lys Ser Thr Val Asn Cys Ser Thr Thr Pro Val Ala Glu Arg
148                153                 158                 163

ttt ttc acc agt tcc acc tct ctg act cta aag cat gct gca tgg tat      585
Phe Phe Thr Ser Ser Thr Ser Leu Thr Leu Lys His Ala Ala Trp Tyr
164                169                 174                 179

cca agt gaa atc ctg gat ccc cac gta gtg ctg tta aca tca gac aac      633
Pro Ser Glu Ile Leu Asp Pro His Val Val Leu Leu Thr Ser Asp Asn
180                185                 190                 195

gta atc aga att tac tca cta cgt gag ccg cag aca ccc act aac gtg      681
Val Ile Arg Ile Tyr Ser Leu Arg Glu Pro Gln Thr Pro Thr Asn Val
196                201                 206                 211

ata ata ctt tca gaa gcc gaa gag gaa agt cta gta ctc aat aaa gga      729
Ile Ile Leu Ser Glu Ala Glu Glu Glu Ser Leu Val Leu Asn Lys Gly
212                217                 222                 227

agg gcg tat acc gca tct cta gga gag aca gca gtt gca ttt gac ttt      777
Arg Ala Tyr Thr Ala Ser Leu Gly Glu Thr Ala Val Ala Phe Asp Phe
228                233                 238                 243

ggg cca ttg gca gca gtc cca aag act cta ttt gga caa aac ggc aaa      825
Gly Pro Leu Ala Ala Val Pro Lys Thr Leu Phe Gly Gln Asn Gly Lys
244                249                 254                 259
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gat gaa gta gtg gca tac cca ctg tac atc tta tat gaa aat gga gag 873
Asp Glu Val Val Ala Tyr Pro Leu Tyr Ile Leu Tyr Glu Asn Gly Glu
260 265 270 275

act ttc ctg aca tac atc agt ctg tta cac agc cct gga aat att tgg 921
Thr Phe Leu Thr Tyr Ile Ser Leu Leu His Ser Pro Gly Asn Ile Trp
276 281 286 291

aaa gct gtt ggg tcc att gcc cat gca tct gcg gct gaa gat aac tat 969
Lys Ala Val Gly Ser Ile Ala His Ala Ser Ala Ala Glu Asp Asn Tyr
292 297 302 307

ggt tat gat gcg tgt gct gta ctc tgc tta ccc tgt gtc ccc aat atc 1017
Gly Tyr Asp Ala Cys Ala Val Leu Cys Leu Pro Cys Val Pro Asn Ile
308 313 318 323

tta gtg atc gct act gaa tca gga atg ctg tat cac tgt gtc gtg cta 1065
Leu Val Ile Ala Thr Glu Ser Gly Met Leu Tyr His Cys Val Val Leu
324 329 334 339

gaa ggg gaa gaa gaa gat gac cac acg tca gaa aag tcc tgg gat tcc 1113
Glu Gly Glu Glu Glu Asp Asp His Thr Ser Glu Lys Ser Trp Asp Ser
340 345 350 355

agg att gac ctc att cct tct ctg tat gtg ttt gaa tgt gtt gag ttg 1161
Arg Ile Asp Leu Ile Pro Ser Leu Tyr Val Phe Glu Cys Val Glu Leu
356 361 366 371

gag ctt gct ttg aaa ctg gca tct gga gag gat gac cct ttt gat tct 1209
Glu Leu Ala Leu Lys Leu Ala Ser Gly Glu Asp Asp Pro Phe Asp Ser
372 377 382 387

gac ttt tct tgt cca gtc aaa ctt cat aga gat ccc aag tgt cct tca 1257
Asp Phe Ser Cys Pro Val Lys Leu His Arg Asp Pro Lys Cys Pro Ser
388 393 398 403

aga tat cac tgt act cat gaa gct ggt gta cat agt gtt ggg cta act 1305
Arg Tyr His Cys Thr His Glu Ala Gly Val His Ser Val Gly Leu Thr
404 409 414 419

tgg att cat aaa ctt cac aaa ttt ctt gga tca gat gaa gaa gat aag 1353
Trp Ile His Lys Leu His Lys Phe Leu Gly Ser Asp Glu Glu Asp Lys
420 425 430 435

gat agt tta cag gaa ctc tct aca gaa cag aaa tgc ttt gtt gaa cac 1401
Asp Ser Leu Gln Glu Leu Ser Thr Glu Gln Lys Cys Phe Val Glu His
436 441 446 451

atc ctt tgt acg agg cca ttg ccc tgc agg cag cca gct cca att cga 1449
Ile Leu Cys Thr Arg Pro Leu Pro Cys Arg Gln Pro Ala Pro Ile Arg
452 457 462 467

gga ttt tgg att gta cct gac att ctg gga ccc acg atg atc tgc atc 1497
Gly Phe Trp Ile Val Pro Asp Ile Leu Gly Pro Thr Met Ile Cys Ile
468 473 478 483

acc agt acc tat gaa tgc ctc ata tgg ccg tta tta agt aca gtc cat 1545

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Thr Ser Thr Tyr Glu Cys Leu Ile Trp Pro Leu Leu Ser Thr Val His
484                 489                 494                 499

cca gcg tct cct ccc ctg ctt tgt act cga gaa gat gtt gaa gtg gca      1593
Pro Ala Ser Pro Pro Leu Leu Cys Thr Arg Glu Asp Val Glu Val Ala
500                 505                 510                 515

gag tct ccc ctc cgt gtt ctg gct gaa acc cca gat tcc ttt gaa aag      1641
Glu Ser Pro Leu Arg Val Leu Ala Glu Thr Pro Asp Ser Phe Glu Lys
516                 521                 526                 531

cat att aga agc att ttg caa cgt agt gtt gcc aat cca gca ttt ttg      1689
His Ile Arg Ser Ile Leu Gln Arg Ser Val Ala Asn Pro Ala Phe Leu
532                 537                 542                 547

aaa gct tct gaa aag gac ata gcc cct cct cct gaa gaa tgc ctt cag      1737
Lys Ala Ser Glu Lys Asp Ile Ala Pro Pro Pro Glu Glu Cys Leu Gln
548                 553                 558                 563

ctc ctc agc aga gcc acc cag gtg ttc aga gag cag tac att ctc aaa      1785
Leu Leu Ser Arg Ala Thr Gln Val Phe Arg Glu Gln Tyr Ile Leu Lys
564                 569                 574                 579

cag gac ttg gca aag gag gag att cag cgg agg gtc aaa tta tta tgt      1833
Gln Asp Leu Ala Lys Glu Glu Ile Gln Arg Arg Val Lys Leu Leu Cys
580                 585                 590                 595

gac caa aaa aag aaa caa cta gaa gat ctc agt tat tgt cga gaa gag      1881
Asp Gln Lys Lys Lys Gln Leu Glu Asp Leu Ser Tyr Cys Arg Glu Glu
596                 601                 606                 611

agg aaa agt ctg cgg gaa atg gct gag cgt tta gct gac aaa tat gag      1929
Arg Lys Ser Leu Arg Glu Met Ala Glu Arg Leu Ala Asp Lys Tyr Glu
612                 617                 622                 627

gaa gct aaa gaa aaa caa gag gat atc atg aac agg atg aaa aaa cta      1977
Glu Ala Lys Glu Lys Gln Glu Asp Ile Met Asn Arg Met Lys Lys Leu
628                 633                 638                 643

ctt cac agt ttt cac tct gag ctc cca gtt ctc tct gat agt gag cga      2025
Leu His Ser Phe His Ser Glu Leu Pro Val Leu Ser Asp Ser Glu Arg
644                 649                 654                 659

gac atg aag aaa gaa tta cag ctg ata cct gat caa ctt cga cat ttg      2073
Asp Met Lys Lys Glu Leu Gln Leu Ile Pro Asp Gln Leu Arg His Leu
660                 665                 670                 675

ggc aat gcc atc aaa cag gtt act atg aaa aag gat tat caa cag caa      2121
Gly Asn Ala Ile Lys Gln Val Thr Met Lys Lys Asp Tyr Gln Gln Gln
676                 681                 686                 691

aag atg gag aag gtg ttg agt ctt cca aaa ccc acc att att ctc agt      2169
Lys Met Glu Lys Val Leu Ser Leu Pro Lys Pro Thr Ile Ile Leu Ser
692                 697                 702                 707

gcc tac cag cga aag tgc att cag tcc atc ctg aaa gag gag ggt gaa      2217
Ala Tyr Gln Arg Lys Cys Ile Gln Ser Ile Leu Lys Glu Glu Gly Glu
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708                      713                      718                      723

cat ata agg gaa atg gtg aag caa atc aat gat atc cgc aat cat gta        2265
His Ile Arg Glu Met Val Lys Gln Ile Asn Asp Ile Arg Asn His Val
724                 729                 734                 739

aac ttc tga caccacc aggagctgac tcacacctga actgaacacc attgaaggct        2321
Asn Phe  *
740

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aaaaaaaaaa a                                                           2392



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agtgcttata gctaaataca ttctgggaac acttagaact tgctaattca gtattgctac      180

ttttacagat gagcctgaag tcttgacaga acctccaagt gccacaacca ctactaccat      240

aggtatatct gcaacctgga caactttggc aggttctcat ggtaaaagaa ataataccat      300

aactacaacc agttcaaaga ggaaaaacag gaaaaataaa attactccag aaaacgttca      360

aattatattt gatgatccac taccaatttc atacagtcag ccagagaagg tgaatggaga      420

gtccaagagc agcagtacca gcgagagtgg ggacagtgat aac atg agg att tcc       475
                                                Met Arg Ile Ser
                                                1

agc tgc agc gat gaa agt agt aac agc aac agc agt cgt aag agt gac        523
Ser Cys Ser Asp Glu Ser Ser Asn Ser Asn Ser Ser Arg Lys Ser Asp
5                   10                  15                  20

aat cat tca cca gct gtg gtc act acc act gtg agc agc aaa aag cag        571
Asn His Ser Pro Ala Val Val Thr Thr Thr Val Ser Ser Lys Lys Gln
21                  26                  31                  36

cca tca gtt ctt gtt aca ttt cca aag gaa gag aga aaa tct gtt tct        619
Pro Ser Val Leu Val Thr Phe Pro Lys Glu Glu Arg Lys Ser Val Ser
37                  42                  47                  52
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ggc aag gct tca ata aaa ttg tca gaa act atc agt gaa ggg acc agt      667
Gly Lys Ala Ser Ile Lys Leu Ser Glu Thr Ile Ser Glu Gly Thr Ser
 53                 58                  63                  68

aat tct cta tct act tgt aca aaa tct ggt cca tct ccc ctt tct tct      715
Asn Ser Leu Ser Thr Cys Thr Lys Ser Gly Pro Ser Pro Leu Ser Ser
 69                 74                  79                  84

cca aat ggg aag tta aca gta gca agt cct aag cgt ggg caa aag agg      763
Pro Asn Gly Lys Leu Thr Val Ala Ser Pro Lys Arg Gly Gln Lys Arg
 85                 90                  95                 100

gaa gaa gga tgg aaa gaa gtt gta aga agg tca aag aaa gta tct gtt      811
Glu Glu Gly Trp Lys Glu Val Val Arg Arg Ser Lys Lys Val Ser Val
101                106                 111                 116

cca tca act gtg ata tcc aga gtg att gga aga gga ggc tgt aat atc      859
Pro Ser Thr Val Ile Ser Arg Val Ile Gly Arg Gly Gly Cys Asn Ile
117                122                 127                 132

aat gct att cgg gag ttt act ggt gca cac ata gat att gat aaa cag      907
Asn Ala Ile Arg Glu Phe Thr Gly Ala His Ile Asp Ile Asp Lys Gln
133                138                 143                 148

aaa gac aag act gga gac cgg ata atc act ata agg ggt ggc act gaa      955
Lys Asp Lys Thr Gly Asp Arg Ile Ile Thr Ile Arg Gly Gly Thr Glu
149                154                 159                 164

tca aca aga caa gca act caa ttg att aat gct ttg atc aag gat cca     1003
Ser Thr Arg Gln Ala Thr Gln Leu Ile Asn Ala Leu Ile Lys Asp Pro
165                170                 175                 180

gac aaa gaa att gat gaa ctt att cca aag aat cgt ttg aaa agc tcc     1051
Asp Lys Glu Ile Asp Glu Leu Ile Pro Lys Asn Arg Leu Lys Ser Ser
181                186                 191                 196

tca gca aat tcc aaa ata ggg tca tca gca cct acc acc act gct gct     1099
Ser Ala Asn Ser Lys Ile Gly Ser Ser Ala Pro Thr Thr Thr Ala Ala
197                202                 207                 212

aac act tcc tta atg gga att aaa atg aca act gta gct ctg tca tca     1147
Asn Thr Ser Leu Met Gly Ile Lys Met Thr Thr Val Ala Leu Ser Ser
213                218                 223                 228

aca tct caa act gcc aca gca ctc act gtg cct gca att tct tct gca     1195
Thr Ser Gln Thr Ala Thr Ala Leu Thr Val Pro Ala Ile Ser Ser Ala
229                234                 239                 244

tcc act cac aaa acc att aag aac cca gtg aat aat gtg agg cct ggt     1243
Ser Thr His Lys Thr Ile Lys Asn Pro Val Asn Asn Val Arg Pro Gly
245                250                 255                 260

ttt cca gtt tct ctt cca tta gca tat cct cct cca cag ttt gca cat     1291
Phe Pro Val Ser Leu Pro Leu Ala Tyr Pro Pro Pro Gln Phe Ala His
261                266                 271                 276

gct ttg ctt gct gct cag act ttc cag cag atc cgt cca cca agg ttg     1339
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Ala Leu Leu Ala Ala Gln Thr Phe Gln Gln Ile Arg Pro Pro Arg Leu
277                 282                 287                 292

ccc atg acc cac ttt gga ggt act ttt cca cca gct caa tcc act tgg      1387
Pro Met Thr His Phe Gly Gly Thr Phe Pro Pro Ala Gln Ser Thr Trp
293                 298                 303                 308

ggt ccg ttt cct gtc agg cct ttg agc cct gcc aga gct act aac tcg      1435
Gly Pro Phe Pro Val Arg Pro Leu Ser Pro Ala Arg Ala Thr Asn Ser
309                 314                 319                 324

cct aag cct cac atg gtg cct cgc cat agc aat caa aat agc agt ggt      1483
Pro Lys Pro His Met Val Pro Arg His Ser Asn Gln Asn Ser Ser Gly
325                 330                 335                 340

tct cag gtg aat tca gca ggt tct tta act tca agc cca aca act aca      1531
Ser Gln Val Asn Ser Ala Gly Ser Leu Thr Ser Ser Pro Thr Thr Thr
341                 346                 351                 356

acc agt tca tca gct tca acg gtg cct ggt aca tct aca aat ggc agt      1579
Thr Ser Ser Ser Ala Ser Thr Val Pro Gly Thr Ser Thr Asn Gly Ser
357                 362                 367                 372

cca agt tca cct tct gtc cga agg cag ctt ttt gtc aca gtt gtg aag      1627
Pro Ser Ser Pro Ser Val Arg Arg Gln Leu Phe Val Thr Val Val Lys
373                 378                 383                 388

aca tcc aat gcc acc aca aca aca gtc aca acc acg gca agc aac aac      1675
Thr Ser Asn Ala Thr Thr Thr Thr Val Thr Thr Thr Ala Ser Asn Asn
389                 394                 399                 404

aac act gca ccc aca aat gcc aca tat cct atg cct act gcc aaa gaa      1723
Asn Thr Ala Pro Thr Asn Ala Thr Tyr Pro Met Pro Thr Ala Lys Glu
405                 410                 415                 420

cac tat cca gta tca tcc cca tct tcc cca tca cca cca gcc cag cca      1771
His Tyr Pro Val Ser Ser Pro Ser Ser Pro Ser Pro Pro Ala Gln Pro
421                 426                 431                 436

gga ggg gtt tct aga aac agc cct ttg gat tgt gga tca gca tct cca      1819
Gly Gly Val Ser Arg Asn Ser Pro Leu Asp Cys Gly Ser Ala Ser Pro
437                 442                 447                 452

aat aaa gtg gca tct tcc tcc gaa cag gaa gca ggt agt cca cca gta      1867
Asn Lys Val Ala Ser Ser Ser Glu Gln Glu Ala Gly Ser Pro Pro Val
453                 458                 463                 468

gta gaa aca aca aac act aga cct cca aac agc agc agt tct tct ggg      1915
Val Glu Thr Thr Asn Thr Arg Pro Pro Asn Ser Ser Ser Ser Ser Gly
469                 474                 479                 484

agt tca tca gct cat tct aat cag caa caa cct ccg gga tct gtt tct      1963
Ser Ser Ser Ala His Ser Asn Gln Gln Gln Pro Pro Gly Ser Val Ser
485                 490                 495                 500

cag gaa cca aga cca cct ctt cag cag tct cag gtt cct ccc ccg gaa      2011
Gln Glu Pro Arg Pro Pro Leu Gln Gln Ser Gln Val Pro Pro Pro Glu
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501                 506                 511                 516

gtt aga atg act gtt cct cct tta gca aca agt tct gct cca gtg gcg      2059
Val Arg Met Thr Val Pro Pro Leu Ala Thr Ser Ser Ala Pro Val Ala
517                 522                 527                 532

gtg cct tct act gcc cca gtg act tac cct atg cct cag aca cca atg      2107
Val Pro Ser Thr Ala Pro Val Thr Tyr Pro Met Pro Gln Thr Pro Met
533                 538                 543                 548

gga tgc ccc cag cct act cct aaa atg gaa acc cct gct att aga cca      2155
Gly Cys Pro Gln Pro Thr Pro Lys Met Glu Thr Pro Ala Ile Arg Pro
549                 554                 559                 564

ccc cct cat ggc aca act gcc cct cac aag aat tca gct tca gtg caa      2203
Pro Pro His Gly Thr Thr Ala Pro His Lys Asn Ser Ala Ser Val Gln
565                 570                 575                 580

aat tca tct gtt gca gtc ctc agt gtc aat cac att aaa aga cct cac      2251
Asn Ser Ser Val Ala Val Leu Ser Val Asn His Ile Lys Arg Pro His
581                 586                 591                 596

agt gtt ccc tct tct gtc cag cta cct tcg acc tta agt aca caa agt      2299
Ser Val Pro Ser Ser Val Gln Leu Pro Ser Thr Leu Ser Thr Gln Ser
597                 602                 607                 612

gct tgt cag aat tca gta cat cca gca aat aag cct att gct ccc aat      2347
Ala Cys Gln Asn Ser Val His Pro Ala Asn Lys Pro Ile Ala Pro Asn
613                 618                 623                 628

ttc agt gcc ccc tta cca ttt ggg ccc ttt agc aca ttg ttt gaa aac      2395
Phe Ser Ala Pro Leu Pro Phe Gly Pro Phe Ser Thr Leu Phe Glu Asn
629                 634                 639                 644

agc cct act tct gct cat gcc ttc tgg gga gga tct gtt gtt tca tct      2443
Ser Pro Thr Ser Ala His Ala Phe Trp Gly Gly Ser Val Val Ser Ser
645                 650                 655                 660

cag tca aca cca gaa tct atg cta tca gga aaa tcc tca tat ttg cca      2491
Gln Ser Thr Pro Glu Ser Met Leu Ser Gly Lys Ser Ser Tyr Leu Pro
661                 666                 671                 676

aat tca gat cct tta cat cag tct gat act tcc aaa gct cca ggt ttt      2539
Asn Ser Asp Pro Leu His Gln Ser Asp Thr Ser Lys Ala Pro Gly Phe
677                 682                 687                 692

aga cca cca tta cag aga cct gct cca agt ccc tca ggt att gtc aat      2587
Arg Pro Pro Leu Gln Arg Pro Ala Pro Ser Pro Ser Gly Ile Val Asn
693                 698                 703                 708

atg gac tcg cca tat ggt tct gta aca cct tct tca aca cat ttg gga      2635
Met Asp Ser Pro Tyr Gly Ser Val Thr Pro Ser Ser Thr His Leu Gly
709                 714                 719                 724

aac ttt gct tca aac att tca gga ggt cag atg tac gga cct ggg gca      2683
Asn Phe Ala Ser Asn Ile Ser Gly Gly Gln Met Tyr Gly Pro Gly Ala
725                 730                 735                 740
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ccc ctt gga gga gca ccc gca gct gct aac ttt aac aga caa cat ttt      2731
Pro Leu Gly Gly Ala Pro Ala Ala Ala Asn Phe Asn Arg Gln His Phe
741                 746                 751                 756

tcc ccg ctt agt ttg ttg act ccg tgt tca tca gca tca aat gat tct      2779
Ser Pro Leu Ser Leu Leu Thr Pro Cys Ser Ser Ala Ser Asn Asp Ser
757                 762                 767                 772

tct gca cag tca gta tcc tcg gga gtt cgt gca cca tct cct gcc cca      2827
Ser Ala Gln Ser Val Ser Ser Gly Val Arg Ala Pro Ser Pro Ala Pro
773                 778                 783                 788

tca tca gta ccg tta ggg tca gaa aag ccc agc aat gtg tct cag gac      2875
Ser Ser Val Pro Leu Gly Ser Glu Lys Pro Ser Asn Val Ser Gln Asp
789                 794                 799                 804

agg aaa gtt cca gtc cct att ggg act gaa cgt tct gca cgt atc agg      2923
Arg Lys Val Pro Val Pro Ile Gly Thr Glu Arg Ser Ala Arg Ile Arg
805                 810                 815                 820

caa act gga acg tca gct cca tct gtt att ggg agc aat ttg tct aca      2971
Gln Thr Gly Thr Ser Ala Pro Ser Val Ile Gly Ser Asn Leu Ser Thr
821                 826                 831                 836

tca gta gga cat agt ggc atc tgg tcc ttt gaa ggg att ggt ggc aat      3019
Ser Val Gly His Ser Gly Ile Trp Ser Phe Glu Gly Ile Gly Gly Asn
837                 842                 847                 852

caa gac aaa gta gac tgg tgt aac cct ggg atg gga aat cct atg atc      3067
Gln Asp Lys Val Asp Trp Cys Asn Pro Gly Met Gly Asn Pro Met Ile
853                 858                 863                 868

cac aga ccg atg tct gac cca gga gta ttt tca caa cat caa gca atg      3115
His Arg Pro Met Ser Asp Pro Gly Val Phe Ser Gln His Gln Ala Met
869                 874                 879                 884

gag cga gat agt aca gga att gta act cct tct ggt aca ttc cat cag      3163
Glu Arg Asp Ser Thr Gly Ile Val Thr Pro Ser Gly Thr Phe His Gln
885                 890                 895                 900

cat gtt cct gca ggc tac atg gac ttt cct aaa gtt ggg ggt atg cct      3211
His Val Pro Ala Gly Tyr Met Asp Phe Pro Lys Val Gly Gly Met Pro
901                 906                 911                 916

ttt tct gtg tat ggg aat gca atg att cct cca gta gca cct atc cct      3259
Phe Ser Val Tyr Gly Asn Ala Met Ile Pro Pro Val Ala Pro Ile Pro
917                 922                 927                 932

gat ggt gct gga gga ccc ata ttt aat ggc cct cat gct gca gac cct      3307
Asp Gly Ala Gly Gly Pro Ile Phe Asn Gly Pro His Ala Ala Asp Pro
933                 938                 943                 948

tct tgg aac tca ctg ata aag atg gtt tcc agc tcc acg gaa aat aat      3355
Ser Trp Asn Ser Leu Ile Lys Met Val Ser Ser Ser Thr Glu Asn Asn
949                 954                 959                 964
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ggc cct caa acg gtg tgg act gga ccc tgg gca cct cac atg aac agt      3403
Gly Pro Gln Thr Val Trp Thr Gly Pro Trp Ala Pro His Met Asn Ser
965                 970                 975                 980

gtg cat atg aac cag ctt ggc tga tgaggatcag cttgttagcc tgcagattcc     3457
Val His Met Asn Gln Leu Gly  *
981                 986

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actgatgtgc ttgactgaag tgtgtaggct ttttgcagaa gatcttacta actgacctat     3577

tttctgtgaa catttgtgac tgcccattcc ccatcatcat ccgttttacc ttagttagca     3637

tttttcttat catttttctt tttttctttc cctcttcccc tttggacata actttctgtt     3697

gaagctgttc tttggctggt tggttttagt actgtaaact gcttctgagc aaacacggaa     3757

atttagcaaa attatgtaaa cttgatcctg aagttttaga atggcaaata aatgtacaat     3817

tgtttacata acagaaaagg ctaagcagaa agtaaatttc aatatgtcag tatagaggct     3877

ctactttatg tagacttaaa ttaatgtgag atatgtacct tcatattcag aaatctggat     3937

gtttccttca tacattaaac tattaataag cataactttt ctactggtgt aatttaagta     3997

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ttttccatgt tgttttatta cctttctca cttttaaaac taatacagac ttatctcctc     4177

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cactgttccc agtcagcata tacaagctct taatattctg tttattaaat aattcaatgt     4417

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taaaagaaag taagcataaa aatcgagtaa tgtatatatc aaaaaaaaag tcgatcggcc     4897

gcgaagttag tagtagtagc gacagctcta gaggatccaa gcttacgtac gcgtgcatgc     4957
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gttatgtaaa agtaggaccc caaccgacag atcctattgc tcgcgccacc tgggcgcgcg     180

gagctttgct cgtttactat tgaaaaagtt ccagcgcggg aaactgaacc cggagctttg     240

cgcacgcccg agccctcaag taatgtgggt tgtggttttt gttgttgttg tcgccacgca     300

tgcgtcttcg tgccgtgtgg ctatttgatt gtgtcaactc ttctgattag aatggcgcca     360

ttttgcggta cggaagctac acagcaacac gtataggaga ctctccccga gatcttctag     420

ggagtgaccc atctattttt gtttgggaag aggaaactcc gaaatgggat cgcggaagac     480

ttaaagggcc aggctgattt ttttttccta ctgcaggtct ctgaggctgt ggttgctaca     540

gggtcaccac gagcttggct tacttgtctc atccttccct tgcctggtat cattttctca     600

gttctcccaa aagcc atg tcc cgg ccc ttg ctc atc acc ttc acc cca gcc     651
                 Met Ser Arg Pro Leu Leu Ile Thr Phe Thr Pro Ala
                  1               5                  10

act gac ccc agc gac ctc tgg aag gat ggg cag cag cag cca cag ccc     699
Thr Asp Pro Ser Asp Leu Trp Lys Asp Gly Gln Gln Gln Pro Gln Pro
 13                 18                  23                  28

gag aag cca gag tcc acc ctg gat ggg gct gca gcc cga gct ttc tat     747
Glu Lys Pro Glu Ser Thr Leu Asp Gly Ala Ala Ala Arg Ala Phe Tyr
 29                 34                  39                  44

gag gcc ctg att ggg gat gag agc agc gct cct gac tcc cag aga tct     795
Glu Ala Leu Ile Gly Asp Glu Ser Ser Ala Pro Asp Ser Gln Arg Ser
 45                 50                  55                  60
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cag act gaa cct gcc aga gaa aga aag aga aaa aaa aaa aaa aaa acg      843
Gln Thr Glu Pro Ala Arg Glu Arg Lys Arg Lys Lys Lys Lys Lys Thr
 61                 66                  71                  76

aag gca cca gca gca gaa gca gtg gca gaa gga gca tca gga aga cat      891
Lys Ala Pro Ala Ala Glu Ala Val Ala Glu Gly Ala Ser Gly Arg His
 77                 82                  87                  92

gga caa ggg aga tcc ctt gag gct gag gat aag atg act cac cgg ata      939
Gly Gln Gly Arg Ser Leu Glu Ala Glu Asp Lys Met Thr His Arg Ile
 93                 98                 103                 108

ctg agg gca gcc cag gag ggg gac ctg cca gaa ctt agg aga ctg ctg      987
Leu Arg Ala Ala Gln Glu Gly Asp Leu Pro Glu Leu Arg Arg Leu Leu
109                114                 119                 124

gaa ccg cat gag gca gga gga gct ggg ggg aat atc aac gcc cgg gat     1035
Glu Pro His Glu Ala Gly Gly Ala Gly Gly Asn Ile Asn Ala Arg Asp
125                130                 135                 140

gcc ttc tgg tgg acc cca ctg atg tgt gct gct cga gcg ggc cag ggg     1083
Ala Phe Trp Trp Thr Pro Leu Met Cys Ala Ala Arg Ala Gly Gln Gly
141                146                 151                 156

gca gct gtg agc tat ctc ctg ggc cgt ggg gct gcc tgg gtg ggg gtc     1131
Ala Ala Val Ser Tyr Leu Leu Gly Arg Gly Ala Ala Trp Val Gly Val
157                162                 167                 172

tgt gag ctg agt ggc agg gat gcg gct cag ctc gct gaa gaa gct ggc     1179
Cys Glu Leu Ser Gly Arg Asp Ala Ala Gln Leu Ala Glu Glu Ala Gly
173                178                 183                 188

ttc cct gag gta gcc cgc atg gtc agg gag agc cat gga gag aca agg     1227
Phe Pro Glu Val Ala Arg Met Val Arg Glu Ser His Gly Glu Thr Arg
189                194                 199                 204

agc ccg gaa aac cgg tct cct act ccc tcc ctc cag tac tgc gag aac     1275
Ser Pro Glu Asn Arg Ser Pro Thr Pro Ser Leu Gln Tyr Cys Glu Asn
205                210                 215                 220

tgt gac acc cac ttc caa gat tcc aac cac cgc aca tcc act gct cac     1323
Cys Asp Thr His Phe Gln Asp Ser Asn His Arg Thr Ser Thr Ala His
221                226                 231                 236

ctg ctg tca ctg tcg cag ggt cct cag cct ccc aac ctt cca ctt ggg     1371
Leu Leu Ser Leu Ser Gln Gly Pro Gln Pro Pro Asn Leu Pro Leu Gly
237                242                 247                 252

gtg ccc atc tcc agc ccg ggc ttc aaa ctg ctg ctg agg ggg ggc tgg     1419
Val Pro Ile Ser Ser Pro Gly Phe Lys Leu Leu Leu Arg Gly Gly Trp
253                258                 263                 268

gag cca gga atg ggg ctg gga ccc cgg ggt gag ggc cgt gcc aat ccc     1467
Glu Pro Gly Met Gly Leu Gly Pro Arg Gly Glu Gly Arg Ala Asn Pro
269                274                 279                 284

atc ccc act gtc ctc aag agg gac cag gaa gga cta ggc tac aga tca     1515
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Ile Pro Thr Val Leu Lys Arg Asp Gln Glu Gly Leu Gly Tyr Arg Ser
285                 290                 295                 300

gca ccc cag ccc cga gtg aca cat ttc cca gct tgg gat acc cga gct      1563
Ala Pro Gln Pro Arg Val Thr His Phe Pro Ala Trp Asp Thr Arg Ala
301                 306                 311                 316

gtg gct ggg agg gag aga ccc cct cgg gtg gcc aca ctg agc tgg agg      1611
Val Ala Gly Arg Glu Arg Pro Pro Arg Val Ala Thr Leu Ser Trp Arg
317                 322                 327                 332

gag gag aga agg agg gag gag aaa gac agg gct tgg gag cgg gat cta      1659
Glu Glu Arg Arg Arg Glu Glu Lys Asp Arg Ala Trp Glu Arg Asp Leu
333                 338                 343                 348

agg act tac atg aac ctc gag ttc tga ctttg gtaaagtctg accctagtct      1711
Arg Thr Tyr Met Asn Leu Glu Phe  *
349                 354

gctgctgaag tctgaacttg ggcctctgac ctgggccctt tgacttcccc ttcctgggat   1771

ctgcccagat gcagatcctg aagtttttgg tcaataggct ctgtcttcgt gagagacggg   1831

ctgagagtca gaaataaatc aaccatttgt ggtttaaaaa aaaaaaa                 1878



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attgagttgt gtagctcagg aatactgtgt tcccaactaa ataccttcca caaaagtgct    180

attaaaagaa gctgtacctc tgaagataaa gtgggccagt ctgaagctct atctagagtc    240

cttcaagtag ctaagaaa  atg aag ttg att tct aat gga gga gat tct gct     291
                     Met Lys Leu Ile Ser Asn Gly Gly Asp Ser Ala
                      1               5

gta gaa atg gat cgg aga aat gtg tct gaa ttt aag agt att aaa aaa      339
Val Glu Met Asp Arg Arg Asn Val Ser Glu Phe Lys Ser Ile Lys Lys
 12                 17                  22                  27

aca tca tta ata aaa aac tgt gat tct aaa agc cag aag tat aat tgt      387
Thr Ser Leu Ile Lys Asn Cys Asp Ser Lys Ser Gln Lys Tyr Asn Cys
 28                 33                  38                  43
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tta gtc atg gag cta tct cca tgc cat gtg aag gaa ata aac ata aaa 435
Leu Val Met Glu Leu Ser Pro Cys His Val Lys Glu Ile Asn Ile Lys
44 49 54 59

ttc gga cca aat tct ggc tct aaa gtg cct tta gca aca gtt aca gta 483
Phe Gly Pro Asn Ser Gly Ser Lys Val Pro Leu Ala Thr Val Thr Val
60 65 70 75

att gat caa tca gaa act aag aag aag gtt ttt ctg tgg agg act gca 531
Ile Asp Gln Ser Glu Thr Lys Lys Lys Val Phe Leu Trp Arg Thr Ala
76 81 86 91

gca ttt tgg gca ttt aca gtg ttt ctt gga gat ata att tta ctc aca 579
Ala Phe Trp Ala Phe Thr Val Phe Leu Gly Asp Ile Ile Leu Leu Thr
92 97 102 107

gat gtt gtt att cat gag gac caa tgg att ggc gag aca gta cta caa 627
Asp Val Val Ile His Glu Asp Gln Trp Ile Gly Glu Thr Val Leu Gln
108 113 118 123

tca aca ttt agc agt cag tta tta aat ctt ggg agt tat tca tct att 675
Ser Thr Phe Ser Ser Gln Leu Leu Asn Leu Gly Ser Tyr Ser Ser Ile
124 129 134 139

cag cct gaa gaa tat tcc agt gta gtt agt gaa gtt gta ctt caa gac 723
Gln Pro Glu Glu Tyr Ser Ser Val Val Ser Glu Val Val Leu Gln Asp
140 145 150 155

tta ctg gca tat gtg tcc tca aaa cat tcc tac ctc aga gat ctt cct 771
Leu Leu Ala Tyr Val Ser Ser Lys His Ser Tyr Leu Arg Asp Leu Pro
156 161 166 171

ccg agg cag cct cag agg gtg aac agt ata gac ttt gta gaa ttg gag 819
Pro Arg Gln Pro Gln Arg Val Asn Ser Ile Asp Phe Val Glu Leu Glu
172 177 182 187

cac ctt caa cct gat gta tta gtc cac gca gta cta aga gtt gtt gat 867
His Leu Gln Pro Asp Val Leu Val His Ala Val Leu Arg Val Val Asp
188 193 198 203

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Phe Thr Ile Leu Thr Glu Ala Val Tyr Ser Tyr Arg Gly Gln Lys Gln
204 209 214 219

aaa aaa gtt atg tta aca gtg gaa cag gcc caa gat caa cat tat gcg 963
Lys Lys Val Met Leu Thr Val Glu Gln Ala Gln Asp Gln His Tyr Ala
220 225 230 235

ctt gta tta tgg ggt cct gga gca gcc tgg tac cct caa ctt caa agg 1011
Leu Val Leu Trp Gly Pro Gly Ala Ala Trp Tyr Pro Gln Leu Gln Arg
236 241 246 251

aaa aaa ggt tat att tgg gaa ttt aaa tat ctt ttt gtt cag tgc aat 1059
Lys Lys Gly Tyr Ile Trp Glu Phe Lys Tyr Leu Phe Val Gln Cys Asn
252 257 262 267

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tac aca cta gaa aac cta gaa ttg cat aca acg cct tgg tca tcc tgt      1107
Tyr Thr Leu Glu Asn Leu Glu Leu His Thr Thr Pro Trp Ser Ser Cys
268                 273                 278                 283

gag tgc ttg ttt gat gat gat ata agg gca att aca ttt aaa gca aaa      1155
Glu Cys Leu Phe Asp Asp Asp Ile Arg Ala Ile Thr Phe Lys Ala Lys
284                 289                 294                 299

ttt caa aaa agt gca ccc tcc ttt gtg aag ata tca gac tta gca acc      1203
Phe Gln Lys Ser Ala Pro Ser Phe Val Lys Ile Ser Asp Leu Ala Thr
300                 305                 310                 315

cac cta gag gat aag tgt tca gga gtg gtt ctg att aaa gcc cag att      1251
His Leu Glu Asp Lys Cys Ser Gly Val Val Leu Ile Lys Ala Gln Ile
316                 321                 326                 331

tca gag ctg gca ttt cct att aca gca tct cag aag ata gcg cta aat      1299
Ser Glu Leu Ala Phe Pro Ile Thr Ala Ser Gln Lys Ile Ala Leu Asn
332                 337                 342                 347

gct cac agt tct ctg aag agt att ttt tct tct ctt ccc aac atc gta      1347
Ala His Ser Ser Leu Lys Ser Ile Phe Ser Ser Leu Pro Asn Ile Val
348                 353                 358                 363

tat act ggc tgt gca aaa tgt gga ttg gaa cta gaa aca gat gag aac      1395
Tyr Thr Gly Cys Ala Lys Cys Gly Leu Glu Leu Glu Thr Asp Glu Asn
364                 369                 374                 379

agg atc tac aaa caa tgt ttt agc tgc ttg cca ttt act atg aag aaa      1443
Arg Ile Tyr Lys Gln Cys Phe Ser Cys Leu Pro Phe Thr Met Lys Lys
380                 385                 390                 395

ata tat tat agg cca gcg tta atg act gcc att gat gga aga cat gat      1491
Ile Tyr Tyr Arg Pro Ala Leu Met Thr Ala Ile Asp Gly Arg His Asp
396                 401                 406                 411

gtt tgt atc cgt gta gaa tca aag ctg ata gag aag att ctt ctc aac      1539
Val Cys Ile Arg Val Glu Ser Lys Leu Ile Glu Lys Ile Leu Leu Asn
412                 417                 422                 427

att tct gca gac tgc ctc aac aga gtg ata gtt cct tcc tca gag atc      1587
Ile Ser Ala Asp Cys Leu Asn Arg Val Ile Val Pro Ser Ser Glu Ile
428                 433                 438                 443

acc tat ggg atg gtc gtg gca gac ctg ttc cac tcc ttg ttg gca gtc      1635
Thr Tyr Gly Met Val Val Ala Asp Leu Phe His Ser Leu Leu Ala Val
444                 449                 454                 459

agc gca gaa cct tgt gta tta aag att cag agc ctt ttt gtg tta gat      1683
Ser Ala Glu Pro Cys Val Leu Lys Ile Gln Ser Leu Phe Val Leu Asp
460                 465                 470                 475

gaa aac agc tat cca tta caa caa gat ttc tcc ctc ctg gat ttt tat      1731
Glu Asn Ser Tyr Pro Leu Gln Gln Asp Phe Ser Leu Leu Asp Phe Tyr
476                 481                 486                 491

cct gac att gta aag cat gga gcc aat gcc cgt ctc tga ggccagagga       1780
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Pro Asp Ile Val Lys His Gly Ala Asn Ala Arg Leu  *
492                 497                 502

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atgacagggc ttttgctttg gatttttat gaaatatatt ttacaaagag aattgcacta   1900

gatatataaa ttaaaacttt tttctaagaa aatcctgtga ggtttaaaaa gattgttttt   1960

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agcggcgccg cgggagttcc gcaggtttcc cgtgttcgca gcggagccgg aggccagctg   180

aacccggccg tgggatcccg gataggagga ggaggggacc cataggacgc gttaac       236
atg gac ctg gaa aac aaa gtg aag aag atg ggc tta ggt cac gag caa     284
Met Asp Leu Glu Asn Lys Val Lys Lys Met Gly Leu Gly His Glu Gln
 1               5                  10                  15

gga ttt gga gcc cct tgt tta aaa tgc aaa gaa aaa tgt gaa gga ttc     332
Gly Phe Gly Ala Pro Cys Leu Lys Cys Lys Glu Lys Cys Glu Gly Phe
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 17                      22                       27                      32

gaa ctg cac ttc tgg aga aaa ata tgt cgt aac tgc aag tgt ggc caa      380
Glu Leu His Phe Trp Arg Lys Ile Cys Arg Asn Cys Lys Cys Gly Gln
 33                      38                       43                      48

gaa gag cat gat gtc ctc ttg agc aat gaa gag gat cga aaa gtg gga      428
Glu Glu His Asp Val Leu Leu Ser Asn Glu Glu Asp Arg Lys Val Gly
 49                      54                       59                      64

aaa ctt ttt gaa gac acc aag tat acc act ctg att gca aaa cta aag      476
Lys Leu Phe Glu Asp Thr Lys Tyr Thr Thr Leu Ile Ala Lys Leu Lys
 65                      70                       75                      80

tca gat gga att ccc atg tat aaa cgc aat gtt atg ata ttg acg aat      524
Ser Asp Gly Ile Pro Met Tyr Lys Arg Asn Val Met Ile Leu Thr Asn
 81                      86                       91                      96

cca gtt gct gcc aag aag aat gtc tcc atc aat aca gtt acc tat gag      572
Pro Val Ala Ala Lys Lys Asn Val Ser Ile Asn Thr Val Thr Tyr Glu
 97                     102                      107                     112

tgg gct cct cct gtc cag aat caa gca ttg gcc agg cag tac atg cag      620
Trp Ala Pro Pro Val Gln Asn Gln Ala Leu Ala Arg Gln Tyr Met Gln
113                     118                      123                     128

atg cta ccc aag gaa aag cag cca gta gca ggc tca gag ggg gca cag      668
Met Leu Pro Lys Glu Lys Gln Pro Val Ala Gly Ser Glu Gly Ala Gln
129                     134                      139                     144

tac cgg aag aag cag ctg gca aag cag ctc cct gca cat gac cag gac      716
Tyr Arg Lys Lys Gln Leu Ala Lys Gln Leu Pro Ala His Asp Gln Asp
145                     150                      155                     160

cct tca aag tgc cat gag ttg tct ccc aga gag gtg aag gag atg gag      764
Pro Ser Lys Cys His Glu Leu Ser Pro Arg Glu Val Lys Glu Met Glu
161                     166                      171                     176

cag ttt gtg aag aaa tat aag agc gaa gct ctg gga gta gga gat gtc      812
Gln Phe Val Lys Lys Tyr Lys Ser Glu Ala Leu Gly Val Gly Asp Val
177                     182                      187                     192

aaa ctt ccc tgt gag atg gat gcc caa ggc ccc aaa caa atg aac att      860
Lys Leu Pro Cys Glu Met Asp Ala Gln Gly Pro Lys Gln Met Asn Ile
193                     198                      203                     208

cct gga ggg gat aga agc acc cca gca gca gtg ggg gcc atg gag gac      908
Pro Gly Gly Asp Arg Ser Thr Pro Ala Ala Val Gly Ala Met Glu Asp
209                     214                      219                     224

aaa tct gct gag cac aaa aga act caa tat tcc tgc tat tgc tgc aaa      956
Lys Ser Ala Glu His Lys Arg Thr Gln Tyr Ser Cys Tyr Cys Cys Lys
225                     230                      235                     240

ctg agt atg aaa gaa ggt gac cca gcc atc tat gcc gaa agg gct ggc     1004
Leu Ser Met Lys Glu Gly Asp Pro Ala Ile Tyr Ala Glu Arg Ala Gly
241                     246                      251                     256
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10035702.010402

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tat gat aaa ctg tgg cac cca gct tgt ttt gtc tgc agc acc tgc cat      1052
Tyr Asp Lys Leu Trp His Pro Ala Cys Phe Val Cys Ser Thr Cys His
257                 262                 267                 272

gaa ctc ctg gtt gac atg att tat ttt tgg aag aat gag aag cta tac      1100
Glu Leu Leu Val Asp Met Ile Tyr Phe Trp Lys Asn Glu Lys Leu Tyr
273                 278                 283                 288

tgt ggc aga cat tac tgt gac agc gag aaa ccc cga tgt gct ggc tgt      1148
Cys Gly Arg His Tyr Cys Asp Ser Glu Lys Pro Arg Cys Ala Gly Cys
289                 294                 299                 304

gac gag ctg ata ttc agc aat gag tat acc cag gca gaa aac cag aat      1196
Asp Glu Leu Ile Phe Ser Asn Glu Tyr Thr Gln Ala Glu Asn Gln Asn
305                 310                 315                 320

tgg cac ctg aaa cac ttc tgc tgc ttt gac tgt gat agc att cta gct      1244
Trp His Leu Lys His Phe Cys Cys Phe Asp Cys Asp Ser Ile Leu Ala
321                 326                 331                 336

ggg gag ata tac gtg atg gtc aat gac aag ccc gtg tgc aag ccc tgc      1292
Gly Glu Ile Tyr Val Met Val Asn Asp Lys Pro Val Cys Lys Pro Cys
337                 342                 347                 352

tat gtg aag aat cac gct gtg gtg tgt caa gga tgc cac aat gcc atc      1340
Tyr Val Lys Asn His Ala Val Val Cys Gln Gly Cys His Asn Ala Ile
353                 358                 363                 368

gac cca gaa gtg cag cgg gtg acc tat aac aat ttc agc tgg cat gca      1388
Asp Pro Glu Val Gln Arg Val Thr Tyr Asn Asn Phe Ser Trp His Ala
369                 374                 379                 384

tcc aca gag tgc ttt ctg tgc tct tgc tgc agc aaa tgc ctc att ggg      1436
Ser Thr Glu Cys Phe Leu Cys Ser Cys Cys Ser Lys Cys Leu Ile Gly
385                 390                 395                 400

cag aag ttc atg cca gta gaa ggg atg gtt ttc tgt tca gtg gaa tgt      1484
Gln Lys Phe Met Pro Val Glu Gly Met Val Phe Cys Ser Val Glu Cys
401                 406                 411                 416

aag aag agg atg tct tag gaggag ggcacccaga agtatcgagc catagctatc      1538
Lys Lys Arg Met Ser  *
417                 422

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cagagggaag cctgctccct gagggctttt tctcaggccc aatagatcag ggtaatcatt     180

accaa atg agg agg aaa gga cga tgt cat cga ggc tct gca gcg agg         227
      Met Arg Arg Lys Gly Arg Cys His Arg Gly Ser Ala Ala Arg
      1               5                   10

cat cct tct tcc cca tgc agt gtt aaa cac tcc cct acg cga gaa acg       275
His Pro Ser Ser Pro Cys Ser Val Lys His Ser Pro Thr Arg Glu Thr
15                  20                  25                  30

ctg acc tac gct caa gct caa agg atg gta gag ata gaa att gaa ggg       323
Leu Thr Tyr Ala Gln Ala Gln Arg Met Val Glu Ile Glu Ile Glu Gly
31                  36                  41                  46

cgc ttg cac agg atc agt att ttt gat ccc ctg gag atc ata ttg gaa       371
Arg Leu His Arg Ile Ser Ile Phe Asp Pro Leu Glu Ile Ile Leu Glu
47                  52                  57                  62

gat gac ctc act gct caa gag atg agt gag tgc aac agc aac aag gaa       419
Asp Asp Leu Thr Ala Gln Glu Met Ser Glu Cys Asn Ser Asn Lys Glu
63                  68                  73                  78

aac agc gag cgg cct cct gtc tgc tta aga act aag cgt cac aaa aac       467
Asn Ser Glu Arg Pro Pro Val Cys Leu Arg Thr Lys Arg His Lys Asn
79                  84                  89                  94

aac aga gtc aaa aag aaa aac gag gcc ctc ccc agc gcc cac ggc acg       515
Asn Arg Val Lys Lys Lys Asn Glu Ala Leu Pro Ser Ala His Gly Thr
95                  100                 105                 110

ccg gcc tcg gcc agt gcc ctc ccg gag ccc aag gtg cgc atc gtg gag       563
Pro Ala Ser Ala Ser Ala Leu Pro Glu Pro Lys Val Arg Ile Val Glu
111                 116                 121                 126

tac agc cct ccg tcc gcc ccc agg agg cct cct gtg tac tac aag ttc       611
Tyr Ser Pro Pro Ser Ala Pro Arg Arg Pro Pro Val Tyr Tyr Lys Phe
127                 132                 137                 142

atc gag aag tcg gcc gag gaa ctg gac aac gag gtg gag tat gac atg       659
Ile Glu Lys Ser Ala Glu Glu Leu Asp Asn Glu Val Glu Tyr Asp Met
143                 148                 153                 158

gac gag gag gac tat gcc tgg ctg gag atc gtc aat gag aag cgc aag       707
Asp Glu Glu Asp Tyr Ala Trp Leu Glu Ile Val Asn Glu Lys Arg Lys
159                 164                 169                 174

ggc gac tgc gtc ccc gcc gtg tcg cag agc atg ttt gag ttc ctg atg       755
Gly Asp Cys Val Pro Ala Val Ser Gln Ser Met Phe Glu Phe Leu Met
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175                 180                 185                 190

gac cgc ttt gag aag gag tcg cac tgc gag aac cag aag cag ggc gag        803
Asp Arg Phe Glu Lys Glu Ser His Cys Glu Asn Gln Lys Gln Gly Glu
191                 196                 201                 206

cag cag tct ctg atc gac gag gac gcc gtg tgc tgc atc tgc atg gac        851
Gln Gln Ser Leu Ile Asp Glu Asp Ala Val Cys Cys Ile Cys Met Asp
207                 212                 217                 222

ggg gag tgt cag aac agc aac gtg atc ctc ttc tgc gac atg tgc aac        899
Gly Glu Cys Gln Asn Ser Asn Val Ile Leu Phe Cys Asp Met Cys Asn
223                 228                 233                 238

ctg gcc gtg cac cag gag tgc tac ggg gtg ccc tac atc ccc gag ggc        947
Leu Ala Val His Gln Glu Cys Tyr Gly Val Pro Tyr Ile Pro Glu Gly
239                 244                 249                 254

cag tgg ctc tgc cgc cac tgc ctg cag tcg cgg gcc cgg ccc gcc gac        995
Gln Trp Leu Cys Arg His Cys Leu Gln Ser Arg Ala Arg Pro Ala Asp
255                 260                 265                 270

tgt gtg ctg tgc ccc aac aag ggt ggt gcc ttc aaa aag aca gat gac       1043
Cys Val Leu Cys Pro Asn Lys Gly Gly Ala Phe Lys Lys Thr Asp Asp
271                 276                 281                 286

gac cgc tgg ggt cac gtg gtg tgt gcc ctg tgg atc cca gag gtc ggc       1091
Asp Arg Trp Gly His Val Val Cys Ala Leu Trp Ile Pro Glu Val Gly
287                 292                 297                 302

ttt gcc aac acg gtg ttc atc gag ccc atc gat ggg gtg agg aac atc       1139
Phe Ala Asn Thr Val Phe Ile Glu Pro Ile Asp Gly Val Arg Asn Ile
303                 308                 313                 318

cct cca gcc cgg tgg aaa ctg aca tgc tac ctc tgt aag cag aag ggc       1187
Pro Pro Ala Arg Trp Lys Leu Thr Cys Tyr Leu Cys Lys Gln Lys Gly
319                 324                 329                 334

gtg ggt gcc tgc atc cag tgc cac aaa gca aac tgc tac aca gca ttc       1235
Val Gly Ala Cys Ile Gln Cys His Lys Ala Asn Cys Tyr Thr Ala Phe
335                 340                 345                 350

cat gtg acg tgt gcc cag aag gct ggc ctg tac atg aaa atg gag ccc       1283
His Val Thr Cys Ala Gln Lys Ala Gly Leu Tyr Met Lys Met Glu Pro
351                 356                 361                 366

gtg aag gaa ctg act ggc ggt ggc acc acc ttc tcc gtc aga aag acc       1331
Val Lys Glu Leu Thr Gly Gly Gly Thr Thr Phe Ser Val Arg Lys Thr
367                 372                 377                 382

gct tac tgt gat gtc cac acg cct cca ggc tgc acc cgg agg cct ctg       1379
Ala Tyr Cys Asp Val His Thr Pro Pro Gly Cys Thr Arg Arg Pro Leu
383                 388                 393                 398

aat att tac ggg gat gtc gaa atg aaa aat ggc gtc tgt cga aaa gag       1427
Asn Ile Tyr Gly Asp Val Glu Met Lys Asn Gly Val Cys Arg Lys Glu
399                 404                 409                 414
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10037270.010402

agc tcg gtt aaa acg gtc agg tcc aca tcc aag gtc agg aag aag gca 1475
Ser Ser Val Lys Thr Val Arg Ser Thr Ser Lys Val Arg Lys Lys Ala
415 420 425 430

aaa aag gct aag aaa gct ctg gct gag ccc tgc gcg gtc ctg ccg acc 1523
Lys Lys Ala Lys Lys Ala Leu Ala Glu Pro Cys Ala Val Leu Pro Thr
431 436 441 446

gtg tgc gct cct tat att ccc ccg cag agg tta aat agg att gcg aat 1571
Val Cys Ala Pro Tyr Ile Pro Pro Gln Arg Leu Asn Arg Ile Ala Asn
447 452 457 462

cag gtg gcc att cag cgg aag aag cag ttt gtg gag cga gcc cac agc 1619
Gln Val Ala Ile Gln Arg Lys Lys Gln Phe Val Glu Arg Ala His Ser
463 468 473 478

tac tgg ctg ctc aag cgg ctg tcc agg aac ggg gcc ccc ctg ctg cgg 1667
Tyr Trp Leu Leu Lys Arg Leu Ser Arg Asn Gly Ala Pro Leu Leu Arg
479 484 489 494

cgg ctg cag tcc agc ctg cag tct cag cga agc tca cag cag aga gaa 1715
Arg Leu Gln Ser Ser Leu Gln Ser Gln Arg Ser Ser Gln Gln Arg Glu
495 500 505 510

aat gat gag gag atg aag gct gcc aaa gag aag ctg aag tac tgg cag 1763
Asn Asp Glu Glu Met Lys Ala Ala Lys Glu Lys Leu Lys Tyr Trp Gln
511 516 521 526

cgg ctg cgg cac gac ctg gag cgc gct cgc ctg ctg atc gag ctg ctg 1811
Arg Leu Arg His Asp Leu Glu Arg Ala Arg Leu Leu Ile Glu Leu Leu
527 532 537 542

cgc aag cgg gag aag ctc aag cgt gag cag gtg aag gtg gag cag gtc 1859
Arg Lys Arg Glu Lys Leu Lys Arg Glu Gln Val Lys Val Glu Gln Val
543 548 553 558

gcc atg gag ctg cgg ctg acc ccg ctg acg gtg ctg ctg cgc tca gtg 1907
Ala Met Glu Leu Arg Leu Thr Pro Leu Thr Val Leu Leu Arg Ser Val
559 564 569 574

ctg gac cag ctg caa gac aag gac ccc gcc agg ata ttt gcg cag ccc 1955
Leu Asp Gln Leu Gln Asp Lys Asp Pro Ala Arg Ile Phe Ala Gln Pro
575 580 585 590

gtg agt ctg aag gag gta cca gat tat ttg gat cac att aaa cat ccc 2003
Val Ser Leu Lys Glu Val Pro Asp Tyr Leu Asp His Ile Lys His Pro
591 596 601 606

atg gac ttt gcc aca atg agg aaa cgg tta gaa gct caa ggg tat aaa 2051
Met Asp Phe Ala Thr Met Arg Lys Arg Leu Glu Ala Gln Gly Tyr Lys
607 612 617 622

aac ctc cat gag ttt gag gag gat ttt gat ctc att ata gat aac tgc 2099
Asn Leu His Glu Phe Glu Glu Asp Phe Asp Leu Ile Ile Asp Asn Cys
623 628 633 638

atg aag tac aat gcc agg gac acc gtg ttc tat aga gcc gcg gtg agg 2147
Met Lys Tyr Asn Ala Arg Asp Thr Val Phe Tyr Arg Ala Ala Val Arg
639 644 649 654

ctg cgc gat cag gga ggt gtt gtt ctg agg cag gcc cgg cgc gag gtg 2195
Leu Arg Asp Gln Gly Gly Val Val Leu Arg Gln Ala Arg Arg Glu Val
655 660 665 670

gac agc atc ggc ttg gaa gag gcc tcg ggg atg cac ctg cct gag cgg 2243
Asp Ser Ile Gly Leu Glu Glu Ala Ser Gly Met His Leu Pro Glu Arg
671 676 681 686

cct gct gcg gca ccg cgg cgg cct ttc tcc tgg gaa gac gtg gac agg 2291
Pro Ala Ala Ala Pro Arg Arg Pro Phe Ser Trp Glu Asp Val Asp Arg
687 692 697 702

ttg ctg gac ccc gcc aac aga gcc cac ctg ggc ctg gag gag cag ctg 2339
Leu Leu Asp Pro Ala Asn Arg Ala His Leu Gly Leu Glu Glu Gln Leu
703 708 713 718

aga gag ctg ctg gac atg ctc gac ctc acc tgc gct atg aag tcc agc 2387
Arg Glu Leu Leu Asp Met Leu Asp Leu Thr Cys Ala Met Lys Ser Ser
719 724 729 734

ggc tcc cgg agc aag cgg gca aag ctg ctc aaa aag gaa att gcc ctt 2435
Gly Ser Arg Ser Lys Arg Ala Lys Leu Leu Lys Lys Glu Ile Ala Leu
735 740 745 750

ctc cga aac aag ctg agc cag cag cac agc cag ccc ctg ccc acg ggg 2483
Leu Arg Asn Lys Leu Ser Gln Gln His Ser Gln Pro Leu Pro Thr Gly
751 756 761 766

cca ggc ttg gaa ggc ttc gaa gag gac gga gct gcg ctg ggg ccg gag 2531
Pro Gly Leu Glu Gly Phe Glu Glu Asp Gly Ala Ala Leu Gly Pro Glu
767 772 777 782

gcg ggc gag gaa gtc ctt ccg agg ttg gag act ctt ctg cag cca agg 2579
Ala Gly Glu Glu Val Leu Pro Arg Leu Glu Thr Leu Leu Gln Pro Arg
783 788 793 798

aaa agg tcg cgg agc aca tgc gga gac tcc gag gtg gag gag gag tcc 2627
Lys Arg Ser Arg Ser Thr Cys Gly Asp Ser Glu Val Glu Glu Glu Ser
799 804 809 814

cca gga aag cgc ctg gac gca ggt ctc acc aac ggc ttt ggg ggt gcg 2675
Pro Gly Lys Arg Leu Asp Ala Gly Leu Thr Asn Gly Phe Gly Gly Ala
815 820 825 830

agg agc gag cag gag ccg ggc ggc ggc ctg ggg agg aag gcc aca ccc 2723
Arg Ser Glu Gln Glu Pro Gly Gly Gly Leu Gly Arg Lys Ala Thr Pro
831 836 841 846

cga cga cgc tgt gcc tcc gag tcc agc atc tcc tcc agc aac agc ccg 2771
Arg Arg Arg Cys Ala Ser Glu Ser Ser Ile Ser Ser Ser Asn Ser Pro
847 / 852 857 862

ctc tgc gac tcg agc ttt aat gcg ccc aaa tgt ggg cgg ggc aaa ccg 2819

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Leu Cys Asp Ser Ser Phe Asn Ala Pro Lys Cys Gly Arg Gly Lys Pro
863                 868                 873                 878

gct ctt gtg cga cgg cac acg ctg gag gac cgc agt gag ctg atc tcc      2867
Ala Leu Val Arg Arg His Thr Leu Glu Asp Arg Ser Glu Leu Ile Ser
879                 884                 889                 894

tgc atc gag aat ggg aac tac gcc aag gcg gcc agg atc gca gcc gaa      2915
Cys Ile Glu Asn Gly Asn Tyr Ala Lys Ala Ala Arg Ile Ala Ala Glu
895                 900                 905                 910

gtc ggc cag agc agc atg tgg atc tcc act gat gcc gcc gcc tcg gtg      2963
Val Gly Gln Ser Ser Met Trp Ile Ser Thr Asp Ala Ala Ala Ser Val
911                 916                 921                 926

ctg gag cct ctg aag gtg gtg tgg gcc aag tgc agc ggc tac ccc tcc      3011
Leu Glu Pro Leu Lys Val Val Trp Ala Lys Cys Ser Gly Tyr Pro Ser
927                 932                 937                 942

tac ccg gca ctg atc atc gac ccc aag atg ccc cgt gtg cct ggc cac      3059
Tyr Pro Ala Leu Ile Ile Asp Pro Lys Met Pro Arg Val Pro Gly His
943                 948                 953                 958

cac aac ggc gtc acc atc ccg gcc cca ccc ctg gac gtg ctg aag att      3107
His Asn Gly Val Thr Ile Pro Ala Pro Pro Leu Asp Val Leu Lys Ile
959                 964                 969                 974

ggg gag cac atg cag acc aag tct gat gag aag ctg ttc ctc gtt ctc      3155
Gly Glu His Met Gln Thr Lys Ser Asp Glu Lys Leu Phe Leu Val Leu
975                 980                 985                 990

ttt ttt gat aat aag aga agt tgg cag tgg ctt cct aag tcc aaa atg      3203
Phe Phe Asp Asn Lys Arg Ser Trp Gln Trp Leu Pro Lys Ser Lys Met
991                 996                1001                1006

gtt ccc ctt ggt att gac gaa act ata gac aag tta aag atg atg gaa      3251
Val Pro Leu Gly Ile Asp Glu Thr Ile Asp Lys Leu Lys Met Met Glu
1007               1012                1017                1022

ggg agg aat tcc agc atc cgg aag gcc gtg cgg atc gct ttt gac cgc      3299
Gly Arg Asn Ser Ser Ile Arg Lys Ala Val Arg Ile Ala Phe Asp Arg
1023               1028                1033                1038

gcc atg aac cac ctg agc cgc gtc cac ggg gag ccg acc agc gac ctc      3347
Ala Met Asn His Leu Ser Arg Val His Gly Glu Pro Thr Ser Asp Leu
1039               1044                1049                1054

agt gac att gac tga cggcccggcc gccagcgcgg gtcttgtcca tagtgttgat      3402
Ser Asp Ile Asp  *
1055

aagctgtaca tgtttgtata ttgttcaaaa cttaacttat tctgattttt agttatagct    3462

ctttaattct ttttccccgg ggaggggga ggttttattt ccaagttttc taggaaccca     3522

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cagagggaag cctgctccct gaggcttttt tctcaggccc aatagatcag ggtaatcatt     180

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        Met Arg Arg Lys Gly Arg Cys His Arg Gly Ser Ala Ala Arg
        1               5                   10
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His Pro Ser Ser Pro Cys Ser Val Lys His Ser Pro Thr Arg Glu Thr
 15                 20                  25                  30

ctg acc tac gct caa gct caa agg atg gta gag ata gaa att gaa ggg      323
Leu Thr Tyr Ala Gln Ala Gln Arg Met Val Glu Ile Glu Ile Glu Gly
 31                 36                  41                  46

cgc ttg cac agg atc agt att ttt gat ccc ctg gag atc ata ttg gaa      371
Arg Leu His Arg Ile Ser Ile Phe Asp Pro Leu Glu Ile Ile Leu Glu
 47                 52                  57                  62

gat gac ctc act gct caa gag atg agt gag tgc aac agc aac aag gaa      419
Asp Asp Leu Thr Ala Gln Glu Met Ser Glu Cys Asn Ser Asn Lys Glu
 63                 68                  73                  78

aac agc gag cgg cct cct gtc tgc tta aga act aag cgt cac aaa aac      467
Asn Ser Glu Arg Pro Pro Val Cys Leu Arg Thr Lys Arg His Lys Asn
 79                 84                  89                  94

aac aga gtc aaa aag aaa aac gag gcc ctc ccc agc gcc cac ggc acg      515
Asn Arg Val Lys Lys Lys Asn Glu Ala Leu Pro Ser Ala His Gly Thr
 95                 100                 105                 110

ccg gcc tcg gcc agt gcc ctc ccg gag ccc aag gtg cgc atc gtg gag      563
Pro Ala Ser Ala Ser Ala Leu Pro Glu Pro Lys Val Arg Ile Val Glu
111                 116                 121                 126

tac agc cct ccg tcc gcc ccc agg agg cct cct gtg tac tac aag ttc      611
Tyr Ser Pro Pro Ser Ala Pro Arg Arg Pro Pro Val Tyr Tyr Lys Phe
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atc gag aag tcg gcc gag gaa ctg gac aac gag gtg gag tat gac atg      659
Ile Glu Lys Ser Ala Glu Glu Leu Asp Asn Glu Val Glu Tyr Asp Met
143                 148                 153                 158

gac gag gag gac tat gcc tgg ctg gag atc gtc aat gag aag cgc aag      707
Asp Glu Glu Asp Tyr Ala Trp Leu Glu Ile Val Asn Glu Lys Arg Lys
159                 164                 169                 174

ggc gac tgc gtc ccc gcc gtg tcg cag agc atg ttt gag ttc ctg atg      755
Gly Asp Cys Val Pro Ala Val Ser Gln Ser Met Phe Glu Phe Leu Met
175                 180                 185                 190

gac cgc ttt gag aag gag tcg cac tgc gag aac cag aag cag ggc gag      803
Asp Arg Phe Glu Lys Glu Ser His Cys Glu Asn Gln Lys Gln Gly Glu
191                 196                 201                 206

cag cag tct ctg atc gac gag gac gcc gtg tgc tgc atc tgc atg gac      851
Gln Gln Ser Leu Ile Asp Glu Asp Ala Val Cys Cys Ile Cys Met Asp
207                 212                 217                 222

ggg gag tgt cag aac agc aac gtg atc ctc ttc tgc gac atg tgc aac      899
Gly Glu Cys Gln Asn Ser Asn Val Ile Leu Phe Cys Asp Met Cys Asn
223                 228                 233                 238

ctg gcc gtg cac cag gag tgc tac ggg gtg ccc tac atc ccc gag ggc      947
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Leu Ala Val His Gln Glu Cys Tyr Gly Val Pro Tyr Ile Pro Glu Gly
239                 244                 249                 254

cag tgg ctc tgc cgc cac tgc ctg cag tcg cgg gcc cgg ccc gcc gac      995
Gln Trp Leu Cys Arg His Cys Leu Gln Ser Arg Ala Arg Pro Ala Asp
255                 260                 265                 270

tgt gtg ctg tgc ccc aac aag ggt ggt gcc ttc aaa aag aca gat gac     1043
Cys Val Leu Cys Pro Asn Lys Gly Gly Ala Phe Lys Lys Thr Asp Asp
271                 276                 281                 286

gac cgc tgg ggt cac gtg gtg tgt gcc ctg tgg atc cca gag gtc ggc     1091
Asp Arg Trp Gly His Val Val Cys Ala Leu Trp Ile Pro Glu Val Gly
287                 292                 297                 302

ttt gcc aac acg gtg ttc atc gag ccc atc gat ggg gtg agg aac atc     1139
Phe Ala Asn Thr Val Phe Ile Glu Pro Ile Asp Gly Val Arg Asn Ile
303                 308                 313                 318

cct cca gcc cgg tgg aaa ctg aca tgc tac ctc tgt aag cag aag ggc     1187
Pro Pro Ala Arg Trp Lys Leu Thr Cys Tyr Leu Cys Lys Gln Lys Gly
319                 324                 329                 334

gtg ggt gcc tgc atc cag tgc cac aaa gca aac tgc tac aca gca ttc     1235
Val Gly Ala Cys Ile Gln Cys His Lys Ala Asn Cys Tyr Thr Ala Phe
335                 340                 345                 350

cat gtg acg tgt gcc cag aag gct ggc ctg tac atg aaa atg gag ccc     1283
His Val Thr Cys Ala Gln Lys Ala Gly Leu Tyr Met Lys Met Glu Pro
351                 356                 361                 366

gtg aag gaa ctg act ggc ggt ggc acc acc ttc tcc gtc aga aag acc     1331
Val Lys Glu Leu Thr Gly Gly Gly Thr Thr Phe Ser Val Arg Lys Thr
367                 372                 377                 382

gct tac tgt gat gtc cac acg cct cca ggc tgc acc cgg agg cct ctg     1379
Ala Tyr Cys Asp Val His Thr Pro Pro Gly Cys Thr Arg Arg Pro Leu
383                 388                 393                 398

aat att tac ggg gat gtc gaa atg aaa aat ggc gtc tgt cga aaa gag     1427
Asn Ile Tyr Gly Asp Val Glu Met Lys Asn Gly Val Cys Arg Lys Glu
399                 404                 409                 414

agc tcg gtt aaa acg gtc agg tcc aca tcc aag gtc agg aag aag gca     1475
Ser Ser Val Lys Thr Val Arg Ser Thr Ser Lys Val Arg Lys Lys Ala
415                 420                 425                 430

aaa aag gct aag aaa gct ctg gct gag ccc tgc gcg gtc ctg ccg acc     1523
Lys Lys Ala Lys Lys Ala Leu Ala Glu Pro Cys Ala Val Leu Pro Thr
431                 436                 441                 446

gtg tgc gct cct tat att ccc ccg cag agg tta aat agg att gcg aat     1571
Val Cys Ala Pro Tyr Ile Pro Pro Gln Arg Leu Asn Arg Ile Ala Asn
447                 452                 457                 462

cag gtg gcc att cag cgg aag aag cag ttt gtg gag cga gcc cac agc     1619
Gln Val Ala Ile Gln Arg Lys Lys Gln Phe Val Glu Arg Ala His Ser
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463                 468                 473                 478

tac tgg ctg ctc aag cgg ctg tcc agg aac ggg gcc ccc ctg ctg cgg      1667
Tyr Trp Leu Leu Lys Arg Leu Ser Arg Asn Gly Ala Pro Leu Leu Arg
479                 484                 489                 494

cgg ctg cag tcc agc ctg cag tct cag cga agc tca cag cag aga gaa      1715
Arg Leu Gln Ser Ser Leu Gln Ser Gln Arg Ser Ser Gln Gln Arg Glu
495                 500                 505                 510

aat gat gag gag atg aag gct gcc aaa gag aag ctg aag tac tgg cag      1763
Asn Asp Glu Glu Met Lys Ala Ala Lys Glu Lys Leu Lys Tyr Trp Gln
511                 516                 521                 526

cgg ctg cgg cac gac ctg gag cgc gct cgc ctg ctg atc gag ctg ctg      1811
Arg Leu Arg His Asp Leu Glu Arg Ala Arg Leu Leu Ile Glu Leu Leu
527                 532                 537                 542

cgc aag cgg gag aag ctc aag cgt gag cag gtg aag gtg gag cag gtc      1859
Arg Lys Arg Glu Lys Leu Lys Arg Glu Gln Val Lys Val Glu Gln Val
543                 548                 553                 558

gcc atg gag ctg cgg ctg acc ccg ctg acg gtg ctg ctg cgc tca gtg      1907
Ala Met Glu Leu Arg Leu Thr Pro Leu Thr Val Leu Leu Arg Ser Val
559                 564                 569                 574

ctg gac cag ctg caa gac aag gac ccc gcc agg ata ttt gcg cag ccc      1955
Leu Asp Gln Leu Gln Asp Lys Asp Pro Ala Arg Ile Phe Ala Gln Pro
575                 580                 585                 590

gtg agt ctg aag gag gta cca gat tat ttg gat cac att aaa cat ccc      2003
Val Ser Leu Lys Glu Val Pro Asp Tyr Leu Asp His Ile Lys His Pro
591                 596                 601                 606

atg gac ttt gcc aca atg agg aaa cgg tta gaa gct caa ggg tat aaa      2051
Met Asp Phe Ala Thr Met Arg Lys Arg Leu Glu Ala Gln Gly Tyr Lys
607                 612                 617                 622

aac ctc cat gag ttt gag gag gat ttt gat ctc att ata gat aac tgc      2099
Asn Leu His Glu Phe Glu Glu Asp Phe Asp Leu Ile Ile Asp Asn Cys
623                 628                 633                 638

atg aag tac aat gcc agg gac acc gtg ttc tat aga gcc gcg gtg agg      2147
Met Lys Tyr Asn Ala Arg Asp Thr Val Phe Tyr Arg Ala Ala Val Arg
639                 644                 649                 654

ctg cgc gat cag gga ggt gtt gtt ctg agg cag gcc cgg cgc gag gtg      2195
Leu Arg Asp Gln Gly Gly Val Val Leu Arg Gln Ala Arg Arg Glu Val
655                 660                 665                 670

gac agc atc ggc ttg gaa gag gcc tcg ggg atg cac ctg cct gag cgg      2243
Asp Ser Ile Gly Leu Glu Glu Ala Ser Gly Met His Leu Pro Glu Arg
671                 676                 681                 686

cct gct gcg gca ccg cgg cgg cct ttc tcc tgg gaa gac gtg gac agg      2291
Pro Ala Ala Ala Pro Arg Arg Pro Phe Ser Trp Glu Asp Val Asp Arg
687                 692                 697                 702
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ttg ctg gac ccc gcc aac aga gcc cac ctg ggc ctg gag gag cag ctg       2339
Leu Leu Asp Pro Ala Asn Arg Ala His Leu Gly Leu Glu Glu Gln Leu
703                 708                 713                 718

aga gag ctg ctg gac atg ctc gac ctc acc tgc gct atg aag tcc agc       2387
Arg Glu Leu Leu Asp Met Leu Asp Leu Thr Cys Ala Met Lys Ser Ser
719                 724                 729                 734

ggc tcc cgg agc aag cgg gca aag ctg ctc aaa aag gaa att gcc ctt       2435
Gly Ser Arg Ser Lys Arg Ala Lys Leu Leu Lys Lys Glu Ile Ala Leu
735                 740                 745                 750

ctc cga aac aag ctg agc cag cag cac agc cag ccc ctg ccc acg ggg       2483
Leu Arg Asn Lys Leu Ser Gln Gln His Ser Gln Pro Leu Pro Thr Gly
751                 756                 761                 766

cca ggc ttg gaa ggc ttc gaa gag gac gga gct gcg ctg ggg ccg gag       2531
Pro Gly Leu Glu Gly Phe Glu Glu Asp Gly Ala Ala Leu Gly Pro Glu
767                 772                 777                 782

gcg ggc gag gaa gga gat aaa tct ccc cct aaa ctt gaa cca tca gat       2579
Ala Gly Glu Glu Gly Asp Lys Ser Pro Pro Lys Leu Glu Pro Ser Asp
783                 788                 793                 798

gca tta cct ctt cct tca aac tcg gag act aat tca gaa cca cca acc       2627
Ala Leu Pro Leu Pro Ser Asn Ser Glu Thr Asn Ser Glu Pro Pro Thr
799                 804                 809                 814

ctc aaa cca gta gaa ctc aac cca gag cag agt aaa ctt ttc aaa aga       2675
Leu Lys Pro Val Glu Leu Asn Pro Glu Gln Ser Lys Leu Phe Lys Arg
815                 820                 825                 830

gtc aca ttt gat aat gaa tca cat agc gct tgc act cag agc gca ctg       2723
Val Thr Phe Asp Asn Glu Ser His Ser Ala Cys Thr Gln Ser Ala Leu
831                 836                 841                 846

gta agc gga cgc cct cca gag ccc acc cgc gcc agt agt ggc gat gtg       2771
Val Ser Gly Arg Pro Pro Glu Pro Thr Arg Ala Ser Ser Gly Asp Val
847                 852                 857                 862

ccg gcg gcg gcg gcc tcc gcg gtg gcg gag cca gca agc gat gta aac       2819
Pro Ala Ala Ala Ala Ser Ala Val Ala Glu Pro Ala Ser Asp Val Asn
863                 868                 873                 878

aga cgc act tct gtt ctc ttc tgc aaa tcg aaa agt gta agc ccc cca       2867
Arg Arg Thr Ser Val Leu Phe Cys Lys Ser Lys Ser Val Ser Pro Pro
879                 884                 889                 894

aag tct gcc aag aac act gaa acc cag cca act tct cct cag cta ggg       2915
Lys Ser Ala Lys Asn Thr Glu Thr Gln Pro Thr Ser Pro Gln Leu Gly
895                 900                 905                 910

acc aaa acc ttt ttg tct gta gtc ctt ccg agg ttg gag act ctt ctg       2963
Thr Lys Thr Phe Leu Ser Val Val Leu Pro Arg Leu Glu Thr Leu Leu
911                 916                 921                 926
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cag cca agg aaa agg tcg cgg agc aca tgc gga gac tcc gag gtg gag      3011
Gln Pro Arg Lys Arg Ser Arg Ser Thr Cys Gly Asp Ser Glu Val Glu
927                 932                 937                 942

gag gag tcc cca gga aag cgc ctg gac gca ggt ctc acc aac ggc ttt      3059
Glu Glu Ser Pro Gly Lys Arg Leu Asp Ala Gly Leu Thr Asn Gly Phe
943                 948                 953                 958

ggg ggt gcg agg agc gag cag gag ccg ggc ggc ggc ctg ggg agg aag      3107
Gly Gly Ala Arg Ser Glu Gln Glu Pro Gly Gly Gly Leu Gly Arg Lys
959                 964                 969                 974

gcc aca ccc cga cga cgc tgt gcc tcc gag tcc agc atc tcc tcc agc      3155
Ala Thr Pro Arg Arg Arg Cys Ala Ser Glu Ser Ser Ile Ser Ser Ser
975                 980                 985                 990

aac agc ccg ctc tgc gac tcg agc ttt aat gcg ccc aaa tgt ggg cgg      3203
Asn Ser Pro Leu Cys Asp Ser Ser Phe Asn Ala Pro Lys Cys Gly Arg
991                 996                 1001                1006

ggc aaa ccg gct ctt gtg cga cgg cac acg ctg gag gac cgc agt gag      3251
Gly Lys Pro Ala Leu Val Arg Arg His Thr Leu Glu Asp Arg Ser Glu
1007                1012                1017                1022

ctg atc tcc tgc atc gag aat ggg aac tac gcc aag gcg gcc agg atc      3299
Leu Ile Ser Cys Ile Glu Asn Gly Asn Tyr Ala Lys Ala Ala Arg Ile
1023                1028                1033                1038

gca gcc gaa gtc ggc cag agc agc atg tgg atc tcc act gat gcc gcc      3347
Ala Ala Glu Val Gly Gln Ser Ser Met Trp Ile Ser Thr Asp Ala Ala
1039                1044                1049                1054

gcc tcg gtg ctg gag cct ctg aag gtg gtg tgg gcc aag tgc agc ggc      3395
Ala Ser Val Leu Glu Pro Leu Lys Val Val Trp Ala Lys Cys Ser Gly
1055                1060                1065                1070

tac ccc tcc tac ccg gca ctg atc atc gac ccc aag atg ccc cgt gtg      3443
Tyr Pro Ser Tyr Pro Ala Leu Ile Ile Asp Pro Lys Met Pro Arg Val
1071                1076                1081                1086

cct ggc cac cac aac ggc gtc acc atc ccg gcc cca ccc ctg gac gtg      3491
Pro Gly His His Asn Gly Val Thr Ile Pro Ala Pro Pro Leu Asp Val
1087                1092                1097                1102

ctg aag att ggg gag cac atg cag acc aag tct gat gag aag ctg ttc      3539
Leu Lys Ile Gly Glu His Met Gln Thr Lys Ser Asp Glu Lys Leu Phe
1103                1108                1113                1118

ctc gtt ctc ttt ttt gat aat aag aga agt tgg cag tgg ctt cct aag      3587
Leu Val Leu Phe Phe Asp Asn Lys Arg Ser Trp Gln Trp Leu Pro Lys
1119                1124                1129                1134

tcc aaa atg gtt ccc ctt ggt att gac gaa act ata gac aag tta aag      3635
Ser Lys Met Val Pro Leu Gly Ile Asp Glu Thr Ile Asp Lys Leu Lys
1135                1140                1145                1150

atg atg gaa ggg agg aat tcc agc atc cgg aag gcc gtg cgg atc gct      3683
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Met Met Glu Gly Arg Asn Ser Ser Ile Arg Lys Ala Val Arg Ile Ala
1151                1156                1161                1166

ttt gac cgc gcc atg aac cac ctg agc cgc gtc cac ggg gag ccg acc      3731
Phe Asp Arg Ala Met Asn His Leu Ser Arg Val His Gly Glu Pro Thr
1167                1172                1177                1182

agc gac ctc agt gac att gac tga cggcccggcc gccagcgcgg gtcttgtcca     3785
Ser Asp Leu Ser Asp Ile Asp  *
1183                1188

tagtgttgat aagctgtaca tgtttgtata ttgttcaaaa cttaacttat tctgattttt    3845

agttatagct ctttaattct ttttccccgg ggaggggga ggttttattt ccaagttttc     3905

taggaaccca tctccgtctg ggcgctgtga gtggggtggg cacgtccggg cagcccagtg    3965

cgtctgtcgc acgtccccag gccgtgctgc tggcgtcact ttctttgata tgtagctttt    4025

tcttaaagac ttttgaatgt ttaataattt tgtaaatcat gctctttaca cagagtacca    4085

cttatttaat aagacgggat gtaaatttac aatgacaaat gtgtatttta agaaagaaaa    4145

tgacattatt ttgaatggta ctttgtggaa agaggggaga ataaagttat gctgtgtaca    4205

tcacttgcag atcaccaaaa acactccgct gcccgtgacc gccggtgggt gtgtccccgc    4265

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atttttatac aggcacataa aaattcaact tggcttggga gcagaatgca ttgcattgta    4445

taaatgactc tggcctgtgt gtactttgat tttataactt gtaatctttt gtttacaatg    4505

aggggctttc tgtaacttgt tttaatttag aacactttgg tagcaataga aactttggat    4565

acatttttgt atggtacctg tgatgtatat agaattagta ctttattttt atttttaaga    4625

ggtaaagcat tatgttgggg aaagtagggt gggtttccaa atttgcattt tttatattaa    4685

aaataaagtc aagatttgga cggtgtggcc attttattcc tacagcccta gacggctagg    4745

tgagccccaa ggacgggtgg ggtgctggct gcagggggcg gggacacgcc tttatcttga    4805

aaactgtcat gggatggcat tatttgttat ttcacctgat catattttta ttttaaaact    4865

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cacagagcca gagagctgga agtgagagca gatccctaac c    atg agc acc agc      173
                                                  Met Ser Thr Ser
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caa cca ggg gcc tgc cca tgc cag gga gct gca agc cgc ccc gcc att       221
Gln Pro Gly Ala Cys Pro Cys Gln Gly Ala Ala Ser Arg Pro Ala Ile
5                   10                  15                  20

ctc tac gca ctt ctg agc tcc agc ctc aag gct gtc ccc cga ccc cgt       269
Leu Tyr Ala Leu Leu Ser Ser Ser Leu Lys Ala Val Pro Arg Pro Arg
21                  26                  31                  36

agc cgc tgc cta tgt agg cag cac cgg ccc gtc cag cta tgt gca cct       317
Ser Arg Cys Leu Cys Arg Gln His Arg Pro Val Gln Leu Cys Ala Pro
37                  42                  47                  52

cat cgc acc tgc cgg gag gcc ttg gat gtt ctg gcc aag aca gtg gcc       365
His Arg Thr Cys Arg Glu Ala Leu Asp Val Leu Ala Lys Thr Val Ala
53                  58                  63                  68

ttc ctc agg aac ctg cca tcc ttc tgg cag ctg cct ccc cag gac cag       413
Phe Leu Arg Asn Leu Pro Ser Phe Trp Gln Leu Pro Pro Gln Asp Gln
69                  74                  79                  84

cgg cgg ctg ctg cag ggt tgc tgg ggc ccc ctc ttc ctg ctt ggg ttg       461
Arg Arg Leu Leu Gln Gly Cys Trp Gly Pro Leu Phe Leu Leu Gly Leu
85                  90                  95                  100

gcc caa gat gct gtg acc ttt gag gtg gct gag gcc ccg gtg ccc agc       509
Ala Gln Asp Ala Val Thr Phe Glu Val Ala Glu Ala Pro Val Pro Ser
101                 106                 111                 116

ata ctc aag aag att ctg ctg gag gag ccc agc agc agt gga ggc agt       557
Ile Leu Lys Lys Ile Leu Leu Glu Glu Pro Ser Ser Ser Gly Gly Ser
117                 122                 127                 132

ggc caa ctg cca gac aga ccc cag ccc tcc ctg gct gcg gtg cag tgg       605
Gly Gln Leu Pro Asp Arg Pro Gln Pro Ser Leu Ala Ala Val Gln Trp
133                 138                 143                 148

ctt caa tgc tgt ctg gag tcc ttc tgg agc ctg gag ctt agc ccc aag       653
Leu Gln Cys Cys Leu Glu Ser Phe Trp Ser Leu Glu Leu Ser Pro Lys
149                 154                 159                 164

gaa tat gcc tgc ctg aaa ggg acc atc ctc ttc aac ccc gat gtg cca       701
Glu Tyr Ala Cys Leu Lys Gly Thr Ile Leu Phe Asn Pro Asp Val Pro
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165                        170                        175                        180

ggc ctc caa gcc gcc tcc cac att ggg cac ctg cag cag gag gct cac        749
Gly Leu Gln Ala Ala Ser His Ile Gly His Leu Gln Gln Glu Ala His
181                 186                 191                 196

tgg gtg ctg tgt gaa gtc ctg gaa ccc tgg tgc cca gca gcc caa ggc        797
Trp Val Leu Cys Glu Val Leu Glu Pro Trp Cys Pro Ala Ala Gln Gly
197                 202                 207                 212

cgc ctg acc cgt gtc ctc ctc acg gcc tcc acc ctc aag tcc att ccg        845
Arg Leu Thr Arg Val Leu Leu Thr Ala Ser Thr Leu Lys Ser Ile Pro
213                 218                 223                 228

acc agc ctg ctt ggg gac ctc ttc ttt cgc cct atc att gga gat gtt        893
Thr Ser Leu Leu Gly Asp Leu Phe Phe Arg Pro Ile Ile Gly Asp Val
229                 234                 239                 244

gac atc gct ggc ctt ctt ggg gac atg ctt ttg ctc agg tga cctgttc        942
Asp Ile Ala Gly Leu Leu Gly Asp Met Leu Leu Leu Arg  *
245                 250                 255

cagcccaggc agagatcagg tgggcagagg ctggcagtgc tgattcagcc tggccatccc    1002

cagaggtgac ccaatgctcc tggagggggc aagcctgtat agacagcact tggctcctta    1062

ggaacagctc ttcactcagc cacaccccac attggacttc cttggtttgg acacagtgct    1122

ccagctgcct gggaggcttt tggtggtccc cacagcctct gggccaagac tcctgtccct    1182

tcttgggatg agaatgaaag cttaggctgc ttattggacc agaagtccta tcgactttat    1242

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gaaaagaaaa atgaagcttt gatggaatgt aaagccaagc ctgttggtag tccaattgtt     180

taagttttca gataaagaag aacatgaaca aaatgattcc atttcaggta aaacgggtga     240

gactggtgtt gaagaa    atg ata gca aca aga aaa gtt gaa caa gat tca      289
                     Met Ile Ala Thr Arg Lys Val Glu Gln Asp Ser
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aag gag aca gta aaa tta tcc cat gaa gat gac cat att ctt gag gac       337
Lys Glu Thr Val Lys Leu Ser His Glu Asp Asp His Ile Leu Glu Asp
 12                  17                  22                  27

gct gga tct tct gat att tct agt gat gct gct tgt aca aat cca aat       385
Ala Gly Ser Ser Asp Ile Ser Ser Asp Ala Ala Cys Thr Asn Pro Asn
 28                  33                  38                  43

aag aca gaa aac agc ctt gta ggt ttg cct agt tgt gta gat gaa gtg       433
Lys Thr Glu Asn Ser Leu Val Gly Leu Pro Ser Cys Val Asp Glu Val
 44                  49                  54                  59

act gaa tgt aat ttg gaa ttg aag gat acc atg ggt att gct gat aaa       481
Thr Glu Cys Asn Leu Glu Leu Lys Asp Thr Met Gly Ile Ala Asp Lys
 60                  65                  70                  75

act gag aac acc ctt gaa aga aat aaa att gaa ccg ttg ggt tat tgt       529
Thr Glu Asn Thr Leu Glu Arg Asn Lys Ile Glu Pro Leu Gly Tyr Cys
 76                  81                  86                  91

gaa gat gcg gag tct aat agg cag ttg gag agc act gag ttt aat aaa       577
Glu Asp Ala Glu Ser Asn Arg Gln Leu Glu Ser Thr Glu Phe Asn Lys
 92                  97                 102                 107

tca aac tta gag gtg gtt gat act agt act ttt gga ccg gaa agt aat       625
Ser Asn Leu Glu Val Val Asp Thr Ser Thr Phe Gly Pro Glu Ser Asn
108                 113                 118                 123

atc ttg gaa aat gct att tgt gat gtg cct gac caa aat tca aaa cag       673
Ile Leu Glu Asn Ala Ile Cys Asp Val Pro Asp Gln Asn Ser Lys Gln
124                 129                 134                 139

ttg aat gct ata gaa agt act aaa ata gag tcc cat gaa aca gca aac       721
Leu Asn Ala Ile Glu Ser Thr Lys Ile Glu Ser His Glu Thr Ala Asn
140                 145                 150                 155

ctt cag gat gac aga aac agc cag tca agt agc gtt tct tac tta gag       769
Leu Gln Asp Asp Arg Asn Ser Gln Ser Ser Ser Val Ser Tyr Leu Glu
156                 161                 166                 171

tca aaa agt gta aaa tcc aaa cat aca aaa cct gta att cat tct aag       817
Ser Lys Ser Val Lys Ser Lys His Thr Lys Pro Val Ile His Ser Lys
172                 177                 182                 187

caa aac atg acc aca gat gct ccg aag aaa att gtt gca gca aag tat       865
Gln Asn Met Thr Thr Asp Ala Pro Lys Lys Ile Val Ala Ala Lys Tyr
188                 193                 198                 203

gaa gta ata cat agc aaa act aaa gtt aat gtc aaa agt gtg aaa cga       913
Glu Val Ile His Ser Lys Thr Lys Val Asn Val Lys Ser Val Lys Arg
204                 209                 214                 219

aat act gat gta cca gaa tct cag caa aat ttt cat agg cca gtc aaa       961
Asn Thr Asp Val Pro Glu Ser Gln Gln Asn Phe His Arg Pro Val Lys
220                 225                 230                 235
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gtc aga aaa aaa caa att gat aag gag cca aag att cag agt tgc aat      1009
Val Arg Lys Lys Gln Ile Asp Lys Glu Pro Lys Ile Gln Ser Cys Asn
236                 241                 246                 251

tct ggg gtt aaa tct gtg aaa aac caa gct cat tct gta ctg aaa aaa      1057
Ser Gly Val Lys Ser Val Lys Asn Gln Ala His Ser Val Leu Lys Lys
252                 257                 262                 267

aca tta cag gat caa act tta gta caa att ttc aag ccc tta act cat      1105
Thr Leu Gln Asp Gln Thr Leu Val Gln Ile Phe Lys Pro Leu Thr His
268                 273                 278                 283

tct ttg agt gat aag tca cac gct cat cct ggt tgc ttg aaa gaa cct      1153
Ser Leu Ser Asp Lys Ser His Ala His Pro Gly Cys Leu Lys Glu Pro
284                 289                 294                 299

cat cat cct gca caa act gga cat gta tca cat tct agc cag aaa cag      1201
His His Pro Ala Gln Thr Gly His Val Ser His Ser Ser Gln Lys Gln
300                 305                 310                 315

tgt cat aag cct cag caa cag gcc cca gca atg aaa acc aat agt cac      1249
Cys His Lys Pro Gln Gln Gln Ala Pro Ala Met Lys Thr Asn Ser His
316                 321                 326                 331

gtg aag gaa gag ctt gaa cac cca ggc gtt gag cat ttt aag gaa gag      1297
Val Lys Glu Glu Leu Glu His Pro Gly Val Glu His Phe Lys Glu Glu
332                 337                 342                 347

gat aaa ctg aaa ctg aaa aaa cct gag aag aac cta caa ccc cgc caa      1345
Asp Lys Leu Lys Leu Lys Lys Pro Glu Lys Asn Leu Gln Pro Arg Gln
348                 353                 358                 363

aga aga agc agc aaa agt ttt tct tta gat gag cca cca ttg ttc att      1393
Arg Arg Ser Ser Lys Ser Phe Ser Leu Asp Glu Pro Pro Leu Phe Ile
364                 369                 374                 379

cca gat aac ata gct acc ata aga aga gaa ggc tct gat cat agc tcc      1441
Pro Asp Asn Ile Ala Thr Ile Arg Arg Glu Gly Ser Asp His Ser Ser
380                 385                 390                 395

tca ttt gaa agc aaa tat atg tgg act ccc agc aag cag tgt ggg ttt      1489
Ser Phe Glu Ser Lys Tyr Met Trp Thr Pro Ser Lys Gln Cys Gly Phe
396                 401                 406                 411

tgc aaa aaa cca cat ggc aac agg ttt atg gtt ggc tgt ggg aga tgt      1537
Cys Lys Lys Pro His Gly Asn Arg Phe Met Val Gly Cys Gly Arg Cys
412                 417                 422                 427

gat gac tgg ttt cat ggt gat tgt gtt ggg tta agt ctt tct caa gca      1585
Asp Asp Trp Phe His Gly Asp Cys Val Gly Leu Ser Leu Ser Gln Ala
428                 433                 438                 443

cag cag atg ggc gag gaa gac aaa gaa tat gtc tgt gta aaa tgt tgt      1633
Gln Gln Met Gly Glu Glu Asp Lys Glu Tyr Val Cys Val Lys Cys Cys
444                 449                 454                 459
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gct gaa gaa gac aaa aag act gaa ata cta gat cca gat act ttg gaa      1681
Ala Glu Glu Asp Lys Lys Thr Glu Ile Leu Asp Pro Asp Thr Leu Glu
460                 465                 470                 475

aac caa gct aca gtt gaa ttc cat agt gga gat aaa aca atg gag tgt      1729
Asn Gln Ala Thr Val Glu Phe His Ser Gly Asp Lys Thr Met Glu Cys
476                 481                 486                 491

gaa aag ctt gga tta tca aaa cac aca aca aat gat aga acc aaa tat      1777
Glu Lys Leu Gly Leu Ser Lys His Thr Thr Asn Asp Arg Thr Lys Tyr
492                 497                 502                 507

ata gat gat aca gtg aag cac aag gtc aaa att tta aaa cgg gag tct      1825
Ile Asp Asp Thr Val Lys His Lys Val Lys Ile Leu Lys Arg Glu Ser
508                 513                 518                 523

ggt gaa ggc aga aat tca tca gac tgt aga gat aat gaa att aaa aaa      1873
Gly Glu Gly Arg Asn Ser Ser Asp Cys Arg Asp Asn Glu Ile Lys Lys
524                 529                 534                 539

tgg cag cta gct cct ctt cgt aag atg gga caa cca gtt tta cct cgg      1921
Trp Gln Leu Ala Pro Leu Arg Lys Met Gly Gln Pro Val Leu Pro Arg
540                 545                 550                 555

aga tcc tca gaa gaa aaa agt gaa aaa ata ccg aaa gag tct aca act      1969
Arg Ser Ser Glu Glu Lys Ser Glu Lys Ile Pro Lys Glu Ser Thr Thr
556                 561                 566                 571

gtt act tgc aca gga gaa aaa gct tca aaa cca ggt act cat gag aag      2017
Val Thr Cys Thr Gly Glu Lys Ala Ser Lys Pro Gly Thr His Glu Lys
572                 577                 582                 587

caa gag atg aaa aag aag aaa gtt gaa aaa gga gtg ctt aat gta cat      2065
Gln Glu Met Lys Lys Lys Lys Val Glu Lys Gly Val Leu Asn Val His
588                 593                 598                 603

cct gct gct tct gct tcc aag cct tct gca gat cag atc agg caa agt      2113
Pro Ala Ala Ser Ala Ser Lys Pro Ser Ala Asp Gln Ile Arg Gln Ser
604                 609                 614                 619

gtc aga cat tct ctc aaa gac att ctt atg aag aga ctt aca gac tca      2161
Val Arg His Ser Leu Lys Asp Ile Leu Met Lys Arg Leu Thr Asp Ser
620                 625                 630                 635

aat ttg aag gta cca gag gaa aag gca gca aaa gtt gcc aca aaa att      2209
Asn Leu Lys Val Pro Glu Glu Lys Ala Ala Lys Val Ala Thr Lys Ile
636                 641                 646                 651

gag aaa gag ctt ttc tct ttt ttt cgg gac aca gat gct aaa tat aag      2257
Glu Lys Glu Leu Phe Ser Phe Phe Arg Asp Thr Asp Ala Lys Tyr Lys
652                 657                 662                 667

aac aaa tat aga agt ttg atg ttt aat ttg aaa gat cct aaa aac aat      2305
Asn Lys Tyr Arg Ser Leu Met Phe Asn Leu Lys Asp Pro Lys Asn Asn
668                 673                 678                 683

ata tta ttt aaa aaa gta ctg aaa gga gaa gta act cct gat cat ctt      2353
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Ile Leu Phe Lys Lys Val Leu Lys Gly Glu Val Thr Pro Asp His Leu
684                 689                 694                 699

atc aga atg agt cca gaa gaa cta gct tct aaa gag tta gct gct tgg      2401
Ile Arg Met Ser Pro Glu Glu Leu Ala Ser Lys Glu Leu Ala Ala Trp
700                 705                 710                 715

aga cga aga gaa aac aga cat acc ata gaa atg att gag aaa gag cag      2449
Arg Arg Arg Glu Asn Arg His Thr Ile Glu Met Ile Glu Lys Glu Gln
716                 721                 726                 731

aga gaa gtg gaa cga cgg cca atc acc aaa ata act cat aaa ggt gaa      2497
Arg Glu Val Glu Arg Arg Pro Ile Thr Lys Ile Thr His Lys Gly Glu
732                 737                 742                 747

ata gaa att gag agt gat gcc cca atg aaa gaa cag gaa gca gcc atg      2545
Ile Glu Ile Glu Ser Asp Ala Pro Met Lys Glu Gln Glu Ala Ala Met
748                 753                 758                 763

gag att cag gaa cca gcc gcc aat aag tca ttg gag aag cca gaa gga      2593
Glu Ile Gln Glu Pro Ala Ala Asn Lys Ser Leu Glu Lys Pro Glu Gly
764                 769                 774                 779

tct gaa aaa caa aaa gag gag gtt gac tct atg tct aaa gat acc act      2641
Ser Glu Lys Gln Lys Glu Glu Val Asp Ser Met Ser Lys Asp Thr Thr
780                 785                 790                 795

agt caa cac aga cag cat ctt ttt gat ctc aac tgc aaa atc tgc ata      2689
Ser Gln His Arg Gln His Leu Phe Asp Leu Asn Cys Lys Ile Cys Ile
796                 801                 806                 811

ggt cga atg gca cca cct gta gat gat ctt tct cca aaa aaa gta aaa      2737
Gly Arg Met Ala Pro Pro Val Asp Asp Leu Ser Pro Lys Lys Val Lys
812                 817                 822                 827

gtt gtt gta gga gta gct cgc aaa cat tca gac aat gaa gca gaa agt      2785
Val Val Val Gly Val Ala Arg Lys His Ser Asp Asn Glu Ala Glu Ser
828                 833                 838                 843

ata gca gat gca tta tct tca acc tca aat att ttg gct tct gaa ttc      2833
Ile Ala Asp Ala Leu Ser Ser Thr Ser Asn Ile Leu Ala Ser Glu Phe
844                 849                 854                 859

ttt gag gag gag aaa cag gag tct cca aag tca acg ttc tct cct gct      2881
Phe Glu Glu Glu Lys Gln Glu Ser Pro Lys Ser Thr Phe Ser Pro Ala
860                 865                 870                 875

cca cgt cca gag atg cct gga act gtt gaa gtt gag tct acc ttt ctg      2929
Pro Arg Pro Glu Met Pro Gly Thr Val Glu Val Glu Ser Thr Phe Leu
876                 881                 886                 891

gct cga ttg aac ttc atc tgg aaa ggt ttt atc aac atg cct tct gtg      2977
Ala Arg Leu Asn Phe Ile Trp Lys Gly Phe Ile Asn Met Pro Ser Val
892                 897                 902                 907

gca aaa ttt gtt acc aaa gcc tat cca gta tct ggc tcc cca gaa tac      3025
Ala Lys Phe Val Thr Lys Ala Tyr Pro Val Ser Gly Ser Pro Glu Tyr
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908                   913                   918                   923

ctg aca gag gac cta cca gat agt att caa gta ggt ggc agg ata tca      3073
Leu Thr Glu Asp Leu Pro Asp Ser Ile Gln Val Gly Gly Arg Ile Ser
924                 929                 934                 939

cct cag aca gtt tgg gat tat gtg gaa aaa ata aaa gca tca gga acc      3121
Pro Gln Thr Val Trp Asp Tyr Val Glu Lys Ile Lys Ala Ser Gly Thr
940                 945                 950                 955

aag gaa att tgt gtg gtt cgc ttc aca cca gta act gaa gaa gat caa      3169
Lys Glu Ile Cys Val Val Arg Phe Thr Pro Val Thr Glu Glu Asp Gln
956                 961                 966                 971

att tct tat act ttg ctc ttt gca tac ttc agt agc aga aag cgc tat      3217
Ile Ser Tyr Thr Leu Leu Phe Ala Tyr Phe Ser Ser Arg Lys Arg Tyr
972                 977                 982                 987

gga gta gct gct aac aac atg aag cag gtt aaa gat atg tac ctt att      3265
Gly Val Ala Ala Asn Asn Met Lys Gln Val Lys Asp Met Tyr Leu Ile
988                 993                 998                 1003

cct ttg ggt gcc aca gat aaa att cca cac cct ctt gtg cct ttt gat      3313
Pro Leu Gly Ala Thr Asp Lys Ile Pro His Pro Leu Val Pro Phe Asp
1004                1009                1014                1019

gga cct ggg ctt gaa ctg cat aga cct aat cta ttg ttg ggc tta att      3361
Gly Pro Gly Leu Glu Leu His Arg Pro Asn Leu Leu Leu Gly Leu Ile
1020                1025                1030                1035

att cgt cag aaa ctg aag cga cag cac agt gcc tgt gct agt act agt      3409
Ile Arg Gln Lys Leu Lys Arg Gln His Ser Ala Cys Ala Ser Thr Ser
1036                1041                1046                1051

cat ata gct gag act cct gaa agt gca cca cca ata gca ttg cca cct      3457
His Ile Ala Glu Thr Pro Glu Ser Ala Pro Pro Ile Ala Leu Pro Pro
1052                1057                1062                1067

gat aaa aaa agt aaa ata gaa gtt tct aca gaa gaa gca cca gag gaa      3505
Asp Lys Lys Ser Lys Ile Glu Val Ser Thr Glu Glu Ala Pro Glu Glu
1068                1073                1078                1083

gaa aat gac ttt ttt aat tct ttt aca act gta tta cac aag cag aga      3553
Glu Asn Asp Phe Phe Asn Ser Phe Thr Thr Val Leu His Lys Gln Arg
1084                1089                1094                1099

aat aaa cct cag cag aat ctt cag gaa gac ctt cca aca gca gtt gaa      3601
Asn Lys Pro Gln Gln Asn Leu Gln Glu Asp Leu Pro Thr Ala Val Glu
1100                1105                1110                1115

cct tta atg gaa gtc acc aaa cag gag cca cca aaa cct tta aga ttt      3649
Pro Leu Met Glu Val Thr Lys Gln Glu Pro Pro Lys Pro Leu Arg Phe
1116                1121                1126                1131
                                                                     |
ctt cct ggc gtg ttg att ggc tgg gag aat caa cct act act ctg gaa      3697
Leu Pro Gly Val Leu Ile Gly Trp Glu Asn Gln Pro Thr Thr Leu Glu
1132                1137                1142                1147
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tta gca aat aaa cct ctt cct gtg gat gat ata ctt caa agc ctt ttg      3745
Leu Ala Asn Lys Pro Leu Pro Val Asp Asp Ile Leu Gln Ser Leu Leu
1148                1153                1158                1163

ggc acc act ggt caa gta tat gac cag gcc cag tca gtg atg gaa caa      3793
Gly Thr Thr Gly Gln Val Tyr Asp Gln Ala Gln Ser Val Met Glu Gln
1164                1169                1174                1179

aac act gtt aaa gaa att cca ttt tta aat gag cag acc aac tca aaa      3841
Asn Thr Val Lys Glu Ile Pro Phe Leu Asn Glu Gln Thr Asn Ser Lys
1180                1185                1190                1195

ata gag aaa aca gat aat gtg gaa gta act gat ggt gaa aac aag gag      3889
Ile Glu Lys Thr Asp Asn Val Glu Val Thr Asp Gly Glu Asn Lys Glu
1196                1201                1206                1211

ata aaa gtt aaa gta gat aat att tca gaa tct aca gat aag tca gca      3937
Ile Lys Val Lys Val Asp Asn Ile Ser Glu Ser Thr Asp Lys Ser Ala
1212                1217                1222                1227

gaa ata gaa aca tca gta gta ggg tcc tct tcc att tct gca ggg tct      3985
Glu Ile Glu Thr Ser Val Val Gly Ser Ser Ser Ile Ser Ala Gly Ser
1228                1233                1238                1243

ttg acg agt ctt agt ctc aga ggt aag cca cca gat gtt tct aca gaa      4033
Leu Thr Ser Leu Ser Leu Arg Gly Lys Pro Pro Asp Val Ser Thr Glu
1244                1249                1254                1259

gca ttt tta aca aat tta tca att cag tca aaa caa gag gaa act gtg      4081
Ala Phe Leu Thr Asn Leu Ser Ile Gln Ser Lys Gln Glu Glu Thr Val
1260                1265                1270                1275

gag agt aaa gag aaa aca tta aaa aga cag ctt cag gaa gat caa gag      4129
Glu Ser Lys Glu Lys Thr Leu Lys Arg Gln Leu Gln Glu Asp Gln Glu
1276                1281                1286                1291

aat aat ttg caa gat aac cag act tca aat agt tct cca tgc aga tct      4177
Asn Asn Leu Gln Asp Asn Gln Thr Ser Asn Ser Ser Pro Cys Arg Ser
1292                1297                1302                1307

aat gta gga aaa gga aac ata gat ggt aat gtg agc tgt agt gaa aac      4225
Asn Val Gly Lys Gly Asn Ile Asp Gly Asn Val Ser Cys Ser Glu Asn
1308                1313                1318                1323

ctt gtt gct aat aca gcg agg tct cca cag ttt atc aac ctg aaa agg      4273
Leu Val Ala Asn Thr Ala Arg Ser Pro Gln Phe Ile Asn Leu Lys Arg
1324                1329                1334                1339

gat cct agg caa gca gca gga cga agt cag cct gta act act tca gaa      4321
Asp Pro Arg Gln Ala Ala Gly Arg Ser Gln Pro Val Thr Thr Ser Glu
1340                1345                1350                1355

agc aaa gat gga gat agt tgc cgg aat gga gaa aaa cac atg ctg cct      4369
Ser Lys Asp Gly Asp Ser Cys Arg Asn Gly Glu Lys His Met Leu Pro
1356                1361                1366                1371
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ggc ctg tca cac aac aag gag cac tta aca gaa caa atc aat gta gag       4417
Gly Leu Ser His Asn Lys Glu His Leu Thr Glu Gln Ile Asn Val Glu
1372                1377                1382                1387

gaa aag ttg tgt tct gca gag aaa aac tcg tgt gtt cag cag agt gac       4465
Glu Lys Leu Cys Ser Ala Glu Lys Asn Ser Cys Val Gln Gln Ser Asp
1388                1393                1398                1403

aat tta aaa gtt gca caa aac tca cca tca gta gaa aac ata cag act       4513
Asn Leu Lys Val Ala Gln Asn Ser Pro Ser Val Glu Asn Ile Gln Thr
1404                1409                1414                1419

tct caa gca gaa caa gca aaa ccc tta cag gag gat att tta atg caa       4561
Ser Gln Ala Glu Gln Ala Lys Pro Leu Gln Glu Asp Ile Leu Met Gln
1420                1425                1430                1435

aat att gaa act gtg cac cca ttt cga aga gga tca gca gta gcg aca       4609
Asn Ile Glu Thr Val His Pro Phe Arg Arg Gly Ser Ala Val Ala Thr
1436                1441                1446                1451

tct cat ttt gaa gtt gga aac aca tgt cca tca gaa ttt cct tct aaa       4657
Ser His Phe Glu Val Gly Asn Thr Cys Pro Ser Glu Phe Pro Ser Lys
1452                1457                1462                1467

agc atc acc ttt act tcc aga agc acc agc ccc aga aca agt aca aac       4705
Ser Ile Thr Phe Thr Ser Arg Ser Thr Ser Pro Arg Thr Ser Thr Asn
1468                1473                1478                1483

ttt tca ccc atg agg cca cag cag ccc aac ctt cag cat ctc aag tct       4753
Phe Ser Pro Met Arg Pro Gln Gln Pro Asn Leu Gln His Leu Lys Ser
1484                1489                1494                1499

agc cca cct gga ttt cca ttt cca ggg cct cct aat ttt ccc cca caa       4801
Ser Pro Pro Gly Phe Pro Phe Pro Gly Pro Pro Asn Phe Pro Pro Gln
1500                1505                1510                1515

agc atg ttt gga ttt cca cca cat ttg cca cct cca tta ctt ccc cct       4849
Ser Met Phe Gly Phe Pro Pro His Leu Pro Pro Pro Leu Leu Pro Pro
1516                1521                1526                1531

cca ggc ttt ggc ttt gct caa aat ccc atg gtt ccc tgg cca cct gtt       4897
Pro Gly Phe Gly Phe Ala Gln Asn Pro Met Val Pro Trp Pro Pro Val
1532                1537                1542                1547

gtt cat ctc cca ggt cag cca cag cgt atg atg ggt cct ctc tca caa       4945
Val His Leu Pro Gly Gln Pro Gln Arg Met Met Gly Pro Leu Ser Gln
1548                1553                1558                1563

gca tca agg tat ata ggc ccg cag aat ttt tac cag gtt aaa gac att       4993
Ala Ser Arg Tyr Ile Gly Pro Gln Asn Phe Tyr Gln Val Lys Asp Ile
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cgg agg cca gaa agg cgc cat agt gac cct tgg ggt agg caa gac caa       5041
Arg Arg Pro Glu Arg Arg His Ser Asp Pro Trp Gly Arg Gln Asp Gln
1580                1585                1590                1595

cag caa ctg gat agg cca ttt aat agg ggt aaa ggg gac cgc cag aga       5089
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Gln Gln Leu Asp Arg Pro Phe Asn Arg Gly Lys Gly Asp Arg Gln Arg
1596                1601                1606                1611

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Phe Tyr Ser Asp Ser His His Leu Lys Arg Glu Arg His Glu Lys Glu
1612                1617                1622                1627

tgg gag caa gaa tct gaa agg cat aga cgc aga gac aga agc caa gac      5185
Trp Glu Gln Glu Ser Glu Arg His Arg Arg Arg Asp Arg Ser Gln Asp
1628                1633                1638                1643

aag gac aga gac aga aaa agc agg gag gaa ggg cac aaa gat aaa gag      5233
Lys Asp Arg Asp Arg Lys Ser Arg Glu Glu Gly His Lys Asp Lys Glu
1644                1649                1654                1659

agg gca cgg tta tca cat ggt gat cga gga aca gat gga aaa gca agc      5281
Arg Ala Arg Leu Ser His Gly Asp Arg Gly Thr Asp Gly Lys Ala Ser
1660                1665                1670                1675

aga gat agt agg aat gta gac aag aag cca gat aaa cct aaa agt gaa      5329
Arg Asp Ser Arg Asn Val Asp Lys Lys Pro Asp Lys Pro Lys Ser Glu
1676                1681                1686                1691

gac tat gag aag gac aaa gaa cga gag aaa agt aaa cac aga gaa gga      5377
Asp Tyr Glu Lys Asp Lys Glu Arg Glu Lys Ser Lys His Arg Glu Gly
1692                1697                1702                1707

gaa aag gac agg gat agg tac cac aaa gat agg gac cac act gac aga      5425
Glu Lys Asp Arg Asp Arg Tyr His Lys Asp Arg Asp His Thr Asp Arg
1708                1713                1718                1723

act aaa agc aaa agg taa aatttg caggctgctt caggattaca tttaaataac      5479
Thr Lys Ser Lys Arg  *
1724                1729

tgttaaaatg ttgtatcttg taaacaaaag aaagattgcc tgctaggatt gtgccatctt    5539

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Cys Arg Leu Leu Leu Leu Thr Leu Ala Ile Leu Ile Phe Ala Ser Asp
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gcc tgc aaa aat gtg aca tta cat gtt ccc tcc aaa cta gat gcc gag      683
Ala Cys Lys Asn Val Thr Leu His Val Pro Ser Lys Leu Asp Ala Glu
 31                  36                  41                  46

aaa ctt gtt ggt aga gtt aac ctg aaa gag tgc ttt aca gct gca aat      731
Lys Leu Val Gly Arg Val Asn Leu Lys Glu Cys Phe Thr Ala Ala Asn
 47                  52                  57                  62

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79 84 89 94

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Thr Ile Leu Leu Ser Asn Thr Glu Asn Gln Glu Lys Lys Lys Ile Phe
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271 276 281 286

cag gtg cca cca tca ccc acc cta ttt tct atg cat cca act aca ggc 1451
Gln Val Pro Pro Ser Pro Thr Leu Phe Ser Met His Pro Thr Thr Gly

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Val Ile Thr Thr Thr Ser Ser Gln Leu Asp Arg Glu Leu Ile Asp Lys
303                 308                 313                 318

tac cag ttg aaa ata aaa gta caa gac atg gat ggt cag tat ttt ggt      1547
Tyr Gln Leu Lys Ile Lys Val Gln Asp Met Asp Gly Gln Tyr Phe Gly
319                 324                 329                 334

cta cag aca act tca act tgt atc att aac att gat gat gta aat gac      1595
Leu Gln Thr Thr Ser Thr Cys Ile Ile Asn Ile Asp Asp Val Asn Asp
335                 340                 345                 350

cac ttg cca aca ttt act cgt act tct tat gtg aca tca gtg gaa gaa      1643
His Leu Pro Thr Phe Thr Arg Thr Ser Tyr Val Thr Ser Val Glu Glu
351                 356                 361                 366

aat aca gtt gat gtg gaa atc tta cga gtt act gtt gag gat aag gac      1691
Asn Thr Val Asp Val Glu Ile Leu Arg Val Thr Val Glu Asp Lys Asp
367                 372                 377                 382

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Leu Val Asn Thr Ala Asn Trp Arg Ala Asn Tyr Thr Ile Leu Lys Gly
383                 388                 393                 398

aat gaa aat ggc aat ttt aaa att gta aca gat gcc aaa acc aat gaa      1787
Asn Glu Asn Gly Asn Phe Lys Ile Val Thr Asp Ala Lys Thr Asn Glu
399                 404                 409                 414

gga gtt ctt tgt gta gtt aag cct ttg aat tat gaa gaa aag caa cag      1835
Gly Val Leu Cys Val Val Lys Pro Leu Asn Tyr Glu Glu Lys Gln Gln
415                 420                 425                 430

atg atc ttg caa att ggt gta gtt aat gaa gct cca ttt tcc aga gag      1883
Met Ile Leu Gln Ile Gly Val Val Asn Glu Ala Pro Phe Ser Arg Glu
431                 436                 441                 446

gct agt cca aga tca gcc atg agc aca gca aca gtt act gtt aat gta      1931
Ala Ser Pro Arg Ser Ala Met Ser Thr Ala Thr Val Thr Val Asn Val
447                 452                 457                 462

gaa gat cag gat gag ggc cct gag tgt aac cct cca ata cag act gtt      1979
Glu Asp Gln Asp Glu Gly Pro Glu Cys Asn Pro Pro Ile Gln Thr Val
463                 468                 473                 478

cgc atg aaa gaa aat gca gaa gtg gga aca aca agc aat gga tat aaa      2027
Arg Met Lys Glu Asn Ala Glu Val Gly Thr Thr Ser Asn Gly Tyr Lys
479                 484                 489                 494

gca tat gac cca gaa aca aga agt agc agt ggc ata agg tat aag aaa      2075
Ala Tyr Asp Pro Glu Thr Arg Ser Ser Ser Gly Ile Arg Tyr Lys Lys
495                 500                 505                 510

tta act gat cca aca ggg tgg gtc acc att gat gaa aat aca gga tca      2123
Leu Thr Asp Pro Thr Gly Trp Val Thr Ile Asp Glu Asn Thr Gly Ser
511                 516                 521                 526
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atc aaa gtt ttc aga agc ctg gat aga gag gca gag acc atc aaa aat      2171
Ile Lys Val Phe Arg Ser Leu Asp Arg Glu Ala Glu Thr Ile Lys Asn
527                 532                 537                 542

ggc ata tat aat att aca gtc ctt gca tca gac caa gga ggg aga aca      2219
Gly Ile Tyr Asn Ile Thr Val Leu Ala Ser Asp Gln Gly Gly Arg Thr
543                 548                 553                 558

tgt acg ggg aca ctg ggc att ata ctt caa gac gtg aat gat aac agc      2267
Cys Thr Gly Thr Leu Gly Ile Ile Leu Gln Asp Val Asn Asp Asn Ser
559                 564                 569                 574

cca ttc ata cct aaa aag aca gtg atc atc tgc aaa ccc acc atg tca      2315
Pro Phe Ile Pro Lys Lys Thr Val Ile Ile Cys Lys Pro Thr Met Ser
575                 580                 585                 590

tct gcg gag att gtt gcg gtt gat cct gat gag cct atc cat ggc cca      2363
Ser Ala Glu Ile Val Ala Val Asp Pro Asp Glu Pro Ile His Gly Pro
591                 596                 601                 606

ccc ttt gac ttt agt ctg gag agt tct act tca gaa gta cag aga atg      2411
Pro Phe Asp Phe Ser Leu Glu Ser Ser Thr Ser Glu Val Gln Arg Met
607                 612                 617                 622

tgg aga ctg aaa gca att aat gat aca gca gca cgt ctt tcc tat cag      2459
Trp Arg Leu Lys Ala Ile Asn Asp Thr Ala Ala Arg Leu Ser Tyr Gln
623                 628                 633                 638

aat gat cct cca ttt ggc tca tat gta gta cct ata aca gtg aga gat      2507
Asn Asp Pro Pro Phe Gly Ser Tyr Val Val Pro Ile Thr Val Arg Asp
639                 644                 649                 654

aga ctt ggc atg tct agt gtc act tca ttg gat gtt aca ctg tgt gac      2555
Arg Leu Gly Met Ser Ser Val Thr Ser Leu Asp Val Thr Leu Cys Asp
655                 660                 665                 670

tgc att acc gaa aat gac tgc aca cat cgt gta gat cca agg att ggc      2603
Cys Ile Thr Glu Asn Asp Cys Thr His Arg Val Asp Pro Arg Ile Gly
671                 676                 681                 686

ggt gga gga gta caa ctt gga aag tgg gcc atc ctt gca ata ttg ttg      2651
Gly Gly Gly Val Gln Leu Gly Lys Trp Ala Ile Leu Ala Ile Leu Leu
687                 692                 697                 702

ggc ata gca ttg ctc ttt tgc atc ctg ttt acg ctg gtc tgt ggg gct      2699
Gly Ile Ala Leu Leu Phe Cys Ile Leu Phe Thr Leu Val Cys Gly Ala
703                 708                 713                 718

tct ggg acg tct aaa caa cca aaa gta att cct gat gat tta gcc cag      2747
Ser Gly Thr Ser Lys Gln Pro Lys Val Ile Pro Asp Asp Leu Ala Gln
719                 724                 729                 734

cag aac cta att gta tca aac aca gaa gct cct gga gat gac aaa gtg      2795
Gln Asn Leu Ile Val Ser Asn Thr Glu Ala Pro Gly Asp Asp Lys Val
735                 740                 745                 750
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tat tct gcg aat ggc ttc aca acc caa act gtg ggc gct tct gct cag      2843
Tyr Ser Ala Asn Gly Phe Thr Thr Gln Thr Val Gly Ala Ser Ala Gln
751                 756                 761                 766

gga gtt tgt ggc acc gtg gga tca gga atc aaa aac gga ggt cag gag      2891
Gly Val Cys Gly Thr Val Gly Ser Gly Ile Lys Asn Gly Gly Gln Glu
767                 772                 777                 782

acc atc gaa atg gtg aaa gga gga cac cag acc tcg gaa tcc tgc cgg      2939
Thr Ile Glu Met Val Lys Gly Gly His Gln Thr Ser Glu Ser Cys Arg
783                 788                 793                 798

ggg gct ggc cac cat cac acc ctg gac tcc tgc agg gga gga cac acg      2987
Gly Ala Gly His His His Thr Leu Asp Ser Cys Arg Gly Gly His Thr
799                 804                 809                 814

gag gtg gac aac tgc aga tac act tac tcg gag tgg cac agt ttt act      3035
Glu Val Asp Asn Cys Arg Tyr Thr Tyr Ser Glu Trp His Ser Phe Thr
815                 820                 825                 830

cag ccc cgt ctt ggt gaa gaa tcc att aga gga cac act ctg att aaa      3083
Gln Pro Arg Leu Gly Glu Glu Ser Ile Arg Gly His Thr Leu Ile Lys
831                 836                 841                 846

aat taa acaatgaaag aaagtgtatc tgtgtaatca agatgaaaat cacaagcatg      3139
Asn  *
847

cccaagacta tgtcctgaca tataactatg aaggaagagg atcggtggct gggtctgtag   3199

gttgttgcag tgaacgacaa gaagaagatg ggcttgaatt tttggataat ttggagccca   3259

aatttaggac actagcagaa gcatgcatga agagatgagt gtgttctaat aagtctctga   3319

aagccagtgg ctttatgact tttaaaaaaa attacaaacc aagaattttt taaagcagaa   3379

gatgctattt gtgggggttt ttctctcatt atttggatgg aatctctttg gtcaaatgca   3439

catttacaga gagacactat aaacaagtac acaaattttt caatttttac atatttttaa   3499

attacttatc ttctatccaa ggaggtctac agagaaatta aagtctgcct tatttgttac   3559

atttgggtat aatgacaaca gccaatttat agtgcaataa aatgtaatta attcaagtcc   3619

ttattataga ctatttgaag cacaacctaa tggaaaattg tagagacctt gctttaacat   3679

tatctccagt taattaagtg ttcatgtggt gcttggaaac tgttgttttc ctgaacatct   3739

aaagtgtgta gactgcattc ttgctattat tttattgttg taatgtgacc ttttcactgt   3799

gcaaagggag atttctagcc aggcattgac tattacaatt tcattttggt ggagtttagt   3859

tttaggtttt attgtatata agatcctgca ctgaatctgt gtctcctctg ttacctactt   3919

ttgccagtga aatttaagtt ttaaaatact ttcagaatgt atttttacta ctgcaagttt   3979

ttggtcttta aaatgtcaag tagcatctct ctctttctct ctgtctcttt ctgtttctct   4039
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ctccagtttt tttttttttt aatttccata tgggctaaga atcagaatat ttgaaatctg   4099

tctggctttc tccctcataa gtgagg                                        4125
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tctacgattc atagatctgg aattcgcggc cgcgtcgacc cgcacc atg ggg tcc     115
                                                   Met Gly Ser
                                                    1

cgc cac ttc gag ggg att tat gac cac gtg ggg cac ttc ggc aga ttc     163
Arg His Phe Glu Gly Ile Tyr Asp His Val Gly His Phe Gly Arg Phe
 4                   9                  14                  19

cag aga gtc ctc tat ttc ata tgt gcc ttc cag aac atc tct tgt ggt     211
Gln Arg Val Leu Tyr Phe Ile Cys Ala Phe Gln Asn Ile Ser Cys Gly
 20                  25                  30                  35

att cac tac ttg gct tct gtg ttc atg gga gtc acc cct cat cat gtc     259
Ile His Tyr Leu Ala Ser Val Phe Met Gly Val Thr Pro His His Val
 36                  41                  46                  51

tgc agg ccc cca ggc aat tgt cat ctg gac tca ttg tgg gac ttg ggg     307
Cys Arg Pro Pro Gly Asn Cys His Leu Asp Ser Leu Trp Asp Leu Gly
 52                  57                  62                  67

att aga gga cct gag aca aag atg ctg ctg ccc tac tgc ttg cta acg     355
Ile Arg Gly Pro Glu Thr Lys Met Leu Leu Pro Tyr Cys Leu Leu Thr
 68                  73                  78                  83

aag cta gga cgc cgg gtg gtc ttg tgg gcc aca agc agt agc atg ttt     403
Lys Leu Gly Arg Arg Val Val Leu Trp Ala Thr Ser Ser Ser Met Phe
 84                  89                  94                  99

ttg ttt gga ata gca gcg gcg ttt gca gtt gat tat tac acc ttc atg     451
Leu Phe Gly Ile Ala Ala Ala Phe Ala Val Asp Tyr Tyr Thr Phe Met
100                 105                 110                 115

gct gct cgc ttt ttt ctt gcc atg gtt gca agt ggc tat ctt gtg gtg     499
Ala Ala Arg Phe Phe Leu Ala Met Val Ala Ser Gly Tyr Leu Val Val
116                 121                 126                 131

ggg ttt gtc tat gtg atg gaa ttc att ggc atg aag tct cgg aca tgg     547
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Gly Phe Val Tyr Val Met Glu Phe Ile Gly Met Lys Ser Arg Thr Trp
132                 137                 142                 147

gcg tct gtc cat ttg cat tcc ttt ttt gca gtt gga acc ctg ctg gtg      595
Ala Ser Val His Leu His Ser Phe Phe Ala Val Gly Thr Leu Leu Val
148                 153                 158                 163

gct ttg aca gga tac ttg gtc agg acc tgg tgg ctt tac cag atg atc      643
Ala Leu Thr Gly Tyr Leu Val Arg Thr Trp Trp Leu Tyr Gln Met Ile
164                 169                 174                 179

ctc tcc aca gtg act gtc ccc ttt atc ctg tgc tgt tgg gtg ctc cca      691
Leu Ser Thr Val Thr Val Pro Phe Ile Leu Cys Cys Trp Val Leu Pro
180                 185                 190                 195

gag aca cct ttt tgg ctt ctc tca gag gga cga tat gaa gaa gca caa      739
Glu Thr Pro Phe Trp Leu Leu Ser Glu Gly Arg Tyr Glu Glu Ala Gln
196                 201                 206                 211

aaa ata gtt gac atc atg gcc aag tgg aac agg gca agc tcc tgt aaa      787
Lys Ile Val Asp Ile Met Ala Lys Trp Asn Arg Ala Ser Ser Cys Lys
212                 217                 222                 227

ctg tca gaa ctt tta tca ctg gac cta caa ggt cct gtt agt aat agc      835
Leu Ser Glu Leu Leu Ser Leu Asp Leu Gln Gly Pro Val Ser Asn Ser
228                 233                 238                 243

ccc act gaa gtt cag aag cac aac cta tca tat ctg ttt tat aac tgg      883
Pro Thr Glu Val Gln Lys His Asn Leu Ser Tyr Leu Phe Tyr Asn Trp
244                 249                 254                 259

agc att acg aaa agg aca ctt acc gtt tgg cta atc tgg ttc act gga      931
Ser Ile Thr Lys Arg Thr Leu Thr Val Trp Leu Ile Trp Phe Thr Gly
260                 265                 270                 275

agt ttg gga ttc tac tcg ttt tcc ttg aat tct gtt aac tta gga ggc      979
Ser Leu Gly Phe Tyr Ser Phe Ser Leu Asn Ser Val Asn Leu Gly Gly
276                 281                 286                 291

aat gaa tac tta aac ctc ttc ctc ctg ggt gta gtg gaa att ccc gcc     1027
Asn Glu Tyr Leu Asn Leu Phe Leu Leu Gly Val Val Glu Ile Pro Ala
292                 297                 302                 307

tac acc ttc gtg tgc atc gcc atg gac aag gtc ggg agg aga aca gtc     1075
Tyr Thr Phe Val Cys Ile Ala Met Asp Lys Val Gly Arg Arg Thr Val
308                 313                 318                 323

ctg gcc tac tct ctt ttc tgc agt gca ctg gcc tgt ggt gtc gtt atg     1123
Leu Ala Tyr Ser Leu Phe Cys Ser Ala Leu Ala Cys Gly Val Val Met
324                 329                 334                 339

gtg atc ccc cag aaa cat tat att ttg ggt gtg gtg aca gct atg gtt     1171
Val Ile Pro Gln Lys His Tyr Ile Leu Gly Val Val Thr Ala Met Val
340                 345                 350                 355

gga aaa ttt gcc atc ggg gca gca ttt ggc ctc att tat ctt tat aca     1219
Gly Lys Phe Ala Ile Gly Ala Ala Phe Gly Leu Ile Tyr Leu Tyr Thr
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10037270.010402

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356                 361                 366                 371

gct gag ctg tat cca acc att gta aga tcg ctg gct gtg gga agc ggc      1267
Ala Glu Leu Tyr Pro Thr Ile Val Arg Ser Leu Ala Val Gly Ser Gly
372                 377                 382                 387

agc atg gtg tgt cgc ctg gcc agc atc ctg gcg ccg ttc tct gtg gac      1315
Ser Met Val Cys Arg Leu Ala Ser Ile Leu Ala Pro Phe Ser Val Asp
388                 393                 398                 403

ctc agc agc att tgg atc ttc ata cca cag ttg ttt gtt ggg act atg      1363
Leu Ser Ser Ile Trp Ile Phe Ile Pro Gln Leu Phe Val Gly Thr Met
404                 409                 414                 419

gcc ctc ctg agt gga gtg tta aca cta aag ctt cca gaa acc ctt ggg      1411
Ala Leu Leu Ser Gly Val Leu Thr Leu Lys Leu Pro Glu Thr Leu Gly
420                 425                 430                 435

aaa cgg cta gca act act tgg gag gag gct gca aaa ctg gag tca gag      1459
Lys Arg Leu Ala Thr Thr Trp Glu Glu Ala Ala Lys Leu Glu Ser Glu
436                 441                 446                 451

aat gaa agc aag tca agc aaa tta ctt ctc aca act aat aat agt ggg      1507
Asn Glu Ser Lys Ser Ser Lys Leu Leu Leu Thr Thr Asn Asn Ser Gly
452                 457                 462                 467

ctg gaa aaa acg gaa gcg att acc ccc agg gat tct ggt ctt ggt gaa      1555
Leu Glu Lys Thr Glu Ala Ile Thr Pro Arg Asp Ser Gly Leu Gly Glu
468                 473                 478                 483

taa atgt gccatgcctg ctgtctagca cctgaaatat tatttaccct aatgcctttg      1612
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484

tattagagga atcttattct catctcccat atgttgtttg tatgtctttt taataaattt    1672

tgtaagaaaa ttttaaagca aatatgttat aaaagaaata aaaactaaga tgaaaattct    1732

cagttttaaa aactgctttc ttattgctgc aaaatatttt tcaacatttg tttttctatg    1792

tagttgattc tcaacctttc cccaccaccc ccctaccatg ctcgtgccga attcttggcc    1852

tcgagggcca aat                                                        1865


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gtctaccgga ttccgccccg ggcctccaac cgcggttaca gggcctctga ctggaaatta    180

gaccagcctg attggactgg tcgcctccga atcacttcaa aagggaagac tgcctatatc    240

aaactcgagg ataaagtttc aggggagctc tttgctcagg caccagtaga acaatatcct    300

ggtattgctg tggagacggt gacagattct agccgctact ttgtaatccg gatccaggat    360

ggtactggtg ggtaaagcag gaatctgaga tttccaagga atctcaagaa   atg gat     416
                                                          Met Asp
                                                           1

gct cgt cct aag ttg gat ctg ggc ttc aag gaa gga caa acc atc aag      464
Ala Arg Pro Lys Leu Asp Leu Gly Phe Lys Glu Gly Gln Thr Ile Lys
  3                 8                  13                  18

ttg tgt atc ggg aac att aca aac aag aaa gga ggt gct tct aag ccc      512
Leu Cys Ile Gly Asn Ile Thr Asn Lys Lys Gly Gly Ala Ser Lys Pro
 19                24                  29                  34

agg act gca agg ggt ggg ggt ctg agc tta ctc cca ccc ccg cca gga      560
Arg Thr Ala Arg Gly Gly Gly Leu Ser Leu Leu Pro Pro Pro Pro Gly
 35                40                  45                  50

ggc aaa gtc act att ccc cca cca tcc tcc tca gtt gcc atc agc aat      608
Gly Lys Val Thr Ile Pro Pro Pro Ser Ser Ser Val Ala Ile Ser Asn
 51                56                  61                  66

cat gtc acc cca cca ccc att ccg aaa tct aac cat gga ggc agt gat      656
His Val Thr Pro Pro Pro Ile Pro Lys Ser Asn His Gly Gly Ser Asp
 67                72                  77                  82

gca gat atc ctt tta gat ttg gat tct cct gct cct gtc acg aca cca      704
Ala Asp Ile Leu Leu Asp Leu Asp Ser Pro Ala Pro Val Thr Thr Pro
 83                88                  93                  98

gca cca act cca gtt tct gta agc aat gac ttg tgg gga gac ttc agc      752
Ala Pro Thr Pro Val Ser Val Ser Asn Asp Leu Trp Gly Asp Phe Ser
 99               104                 109                 114

act gcc tcc agc tct gtt cca aac cag gca cca cag cca tcc aac tgg      800
Thr Ala Ser Ser Ser Val Pro Asn Gln Ala Pro Gln Pro Ser Asn Trp
115               120                 125                 130

gtc cag ttc tga atg gcattggcag gacattaagg acagacttga ggaataaaaa      855
Val Gln Phe  *
131

tgaccttgag ggcaccaatc tgtgagggaa gttaggaacc catttcctcc ccagaaccag    915

aatgactgga caatcttttt catagcttct ccatcacatt caagctggtt tatgtcactc    975

ccctgtgttg ttacttgtac agccaagaaa gtatctgtta tctcctgcgt agtaccaagg   1035
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    Met Ala Asp Leu Glu Ala Val Leu Ala Asp Val Ser Tyr Leu Met
      1               5                  10

gcc atg gag aag agc aag gcg acc ccg gcc gcc cgc gcc agc aag agg       154
Ala Met Glu Lys Ser Lys Ala Thr Pro Ala Ala Arg Ala Ser Lys Arg
 16                 21                  26                  31

atc gtc ctg ccg gag ccc agt atc cgg agt gtg atg cag aag tac ctt       202
Ile Val Leu Pro Glu Pro Ser Ile Arg Ser Val Met Gln Lys Tyr Leu
 32                 37                  42                  47

gca gag aga aat gaa ata acc ttt gac aag att ttc aat cag aaa att       250
Ala Glu Arg Asn Glu Ile Thr Phe Asp Lys Ile Phe Asn Gln Lys Ile
 48                 53                  58                  63

ggt ttc ttg cta ttt aaa gat ttt tgt ttg aat gaa att aat gaa gct       298
Gly Phe Leu Leu Phe Lys Asp Phe Cys Leu Asn Glu Ile Asn Glu Ala
 64                 69                  74                  79

gta cct cag gtg aag ttt tat gaa gag ata aag gaa tat gaa aaa ctt       346
Val Pro Gln Val Lys Phe Tyr Glu Glu Ile Lys Glu Tyr Glu Lys Leu
 80                 85                  90                  95

gat aat gag gaa gac cgc ctt tgc aga agt cga caa att tat gat gcc       394
Asp Asn Glu Glu Asp Arg Leu Cys Arg Ser Arg Gln Ile Tyr Asp Ala
 96                101                 106                 111

tac atc atg aag gaa ctt ctt tcc tgt tca cat cct ttc tca aag caa       442
Tyr Ile Met Lys Glu Leu Leu Ser Cys Ser His Pro Phe Ser Lys Gln
112                117                 122                 127

gct gta gaa cac gta caa agt cat tta tcc aag aaa caa gtg aca tca       490
Ala Val Glu His Val Gln Ser His Leu Ser Lys Lys Gln Val Thr Ser
128                133                 138                 143

act ctt ttt cag cca tac ata gaa gaa att tgt gaa agc ctt cga ggt       538
Thr Leu Phe Gln Pro Tyr Ile Glu Glu Ile Cys Glu Ser Leu Arg Gly
144                149                 154                 159

gac att ttt caa aaa ttt atg gaa agt gac aag ttc act aga ttt tgt       586
Asp Ile Phe Gln Lys Phe Met Glu Ser Asp Lys Phe Thr Arg Phe Cys
160                165                 170                 175

cag tgg aaa aac gtt gaa tta aat atc cat ttg acc atg aat gag ttc       634
Gln Trp Lys Asn Val Glu Leu Asn Ile His Leu Thr Met Asn Glu Phe
176                181                 186                 191
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agt gtg cat agg att att gga cga gga gga ttc ggg gaa gtt tat ggt      682
Ser Val His Arg Ile Ile Gly Arg Gly Gly Phe Gly Glu Val Tyr Gly
192                 197                 202                 207

tgc agg aaa gca gac act gga aaa atg tat gca atg aaa tgc tta gat      730
Cys Arg Lys Ala Asp Thr Gly Lys Met Tyr Ala Met Lys Cys Leu Asp
208                 213                 218                 223

aag aag agg atc aaa atg aaa caa gga gaa aca tta gcc tta aat gaa      778
Lys Lys Arg Ile Lys Met Lys Gln Gly Glu Thr Leu Ala Leu Asn Glu
224                 229                 234                 239

aga atc atg ttg tct ctt gtc agc aca gga gac tgt cct ttc att gta      826
Arg Ile Met Leu Ser Leu Val Ser Thr Gly Asp Cys Pro Phe Ile Val
240                 245                 250                 255

tgt atg acc tat gcc ttc cat acc cca gat aaa ctc tgc ttc atc ctg      874
Cys Met Thr Tyr Ala Phe His Thr Pro Asp Lys Leu Cys Phe Ile Leu
256                 261                 266                 271

gat ctg atg aac ggg ggc gat ttg cac tac cac ctt tca caa cac ggt      922
Asp Leu Met Asn Gly Gly Asp Leu His Tyr His Leu Ser Gln His Gly
272                 277                 282                 287

gtg ttc tct gag aag gag atg cgg ttt tat gcc act gaa atc att ctg      970
Val Phe Ser Glu Lys Glu Met Arg Phe Tyr Ala Thr Glu Ile Ile Leu
288                 293                 298                 303

ggt ctg gaa cac atg cac aat cgg ttt gtt gtc tac aga gat ttg aag     1018
Gly Leu Glu His Met His Asn Arg Phe Val Val Tyr Arg Asp Leu Lys
304                 309                 314                 319

cca gca aat att ctc ttg gat gaa cat gga cac gca aga ata tca gat     1066
Pro Ala Asn Ile Leu Leu Asp Glu His Gly His Ala Arg Ile Ser Asp
320                 325                 330                 335

ctt ggt ctt gcc tgc gat ttt tcc aaa aag aag cct cat gcg agt gtg     1114
Leu Gly Leu Ala Cys Asp Phe Ser Lys Lys Lys Pro His Ala Ser Val
336                 341                 346                 351

ggc acc cat ggg tac atg gct ccc gag gtg ctg cag aag ggg acg gcc     1162
Gly Thr His Gly Tyr Met Ala Pro Glu Val Leu Gln Lys Gly Thr Ala
352                 357                 362                 367

tat gac agc agt gcc gac tgg ttc tcc ctg ggc tgc atg ctt ttc aaa     1210
Tyr Asp Ser Ser Ala Asp Trp Phe Ser Leu Gly Cys Met Leu Phe Lys
368                 373                 378                 383

ctt ctg aga ggg cac agc cct ttc aga caa cat aaa acc aaa gac aag     1258
Leu Leu Arg Gly His Ser Pro Phe Arg Gln His Lys Thr Lys Asp Lys
384                 389                 394                 399

cat gaa att|gac cga atg aca ctc acc gtg aat gtg gaa ctt cca gac     1306
His Glu Ile Asp Arg Met Thr Leu Thr Val Asn Val Glu Leu Pro Asp
400                 405                 410                 415

acc ttc tct cct gaa ctg aag tcc ctt ttg gag ggc ttg ctt cag cga     1354
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Thr Phe Ser Pro Glu Leu Lys Ser Leu Leu Glu Gly Leu Leu Gln Arg
416                 421                 426                 431

gac gtt agc aag cgg ctg ggc tgt cac gga ggc ggc tca cag gaa gta      1402
Asp Val Ser Lys Arg Leu Gly Cys His Gly Gly Gly Ser Gln Glu Val
432                 437                 442                 447

aaa gag cac agc ttt ttc aaa ggt gtt gac tgg cag cat gtc tac tta      1450
Lys Glu His Ser Phe Phe Lys Gly Val Asp Trp Gln His Val Tyr Leu
448                 453                 458                 463

caa aag tac cca cca ccc ttg att cct ccc cgg gga gaa gtc aat gct      1498
Gln Lys Tyr Pro Pro Pro Leu Ile Pro Pro Arg Gly Glu Val Asn Ala
464                 469                 474                 479

gct gat gcc ttt gat att ggc tca ttt gat gaa gag gat acc aaa ggg      1546
Ala Asp Ala Phe Asp Ile Gly Ser Phe Asp Glu Glu Asp Thr Lys Gly
480                 485                 490                 495

att aag cta ctt gat tgc gac caa gaa ctc tac aag aac ttc cct ttg      1594
Ile Lys Leu Leu Asp Cys Asp Gln Glu Leu Tyr Lys Asn Phe Pro Leu
496                 501                 506                 511

gtc atc tct gaa cgc tgg cag caa gaa gta acg gaa aca gtt tat gaa      1642
Val Ile Ser Glu Arg Trp Gln Gln Glu Val Thr Glu Thr Val Tyr Glu
512                 517                 522                 527

gca gta aat gca gac aca gat aaa atc gag gcc agg aag aga gct aaa      1690
Ala Val Asn Ala Asp Thr Asp Lys Ile Glu Ala Arg Lys Arg Ala Lys
528                 533                 538                 543

aat aag caa ctt ggc cac gaa gaa gat tac gct ctg ggg aag gac tgt      1738
Asn Lys Gln Leu Gly His Glu Glu Asp Tyr Ala Leu Gly Lys Asp Cys
544                 549                 554                 559

att atg cac ggg tac atg ctg aaa ctg gga aac cca ttt ctg act cag      1786
Ile Met His Gly Tyr Met Leu Lys Leu Gly Asn Pro Phe Leu Thr Gln
560                 565                 570                 575

tgg cag cgt cgc tat ttt tac ctc ttt cca aat aga ctt gaa tgg aga      1834
Trp Gln Arg Arg Tyr Phe Tyr Leu Phe Pro Asn Arg Leu Glu Trp Arg
576                 581                 586                 591

gga gag gga gag tcc cgg caa aat tta ctg aca atg gaa cag att ctc      1882
Gly Glu Gly Glu Ser Arg Gln Asn Leu Leu Thr Met Glu Gln Ile Leu
592                 597                 602                 607

tct gtg gaa gaa act caa att aaa gac aaa aaa tgc att ttg ttc aga      1930
Ser Val Glu Glu Thr Gln Ile Lys Asp Lys Lys Cys Ile Leu Phe Arg
608                 613                 618                 623

ata aaa gga ggg aaa caa ttt gtc ttg caa tgt gag agt gat cca gag      1978
Ile Lys Gly Gly Lys Gln Phe Val Leu Gln Cys Glu Ser Asp Pro Glu
624                 629                 634                 639

ttt gtg cag tgg aag aaa gag ttg aac gaa acc ttc aag gag gcc cag      2026
Phe Val Gln Trp Lys Lys Glu Leu Asn Glu Thr Phe Lys Glu Ala Gln
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640                 645                 650                 655

cgg cta ttg cgt cgt gcc ccg aag ttc ctc aac aaa cct cgg tca ggt      2074
Arg Leu Leu Arg Arg Ala Pro Lys Phe Leu Asn Lys Pro Arg Ser Gly
656                 661                 666                 671

act gtg gag ctc cca aag cca tcc ctc tgt cac aga aac agc aac ggc      2122
Thr Val Glu Leu Pro Lys Pro Ser Leu Cys His Arg Asn Ser Asn Gly
672                 677                 682                 687

ctc tag cacccagaaa cagggagggt cctcgaggag gacacaccag ggtctcagcc      2178
Leu  *
688

ttttggggtg aacgaggatg aggcatctga tctattcgct accgggactc ctccaggctc   2238

ccgagaggag tcgggaccct tcggcttggg gtcagctcag ctccctgcct tgtcacattt   2298

gtctgcatta gaaactactg aagaaataaa agttcttttt ctttgctaca aaaaaaaaaa   2358

aaaa                                                                2362



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agcccgggaa ccgagttgcg ggagtgcggt ctgtgccgtt ccggccagga gtttgccgac    120

tgcagacgtc ctgcgaaccg gcaag  atg tgc tct ctg ggg ttg ttc cct cct     172
                             Met Cys Ser Leu Gly Leu Phe Pro Pro
                              1               5

cca ccg cct cgg ggt caa gtc acc cta tat gag cac aat aac gag ctg      220
Pro Pro Pro Arg Gly Gln Val Thr Leu Tyr Glu His Asn Asn Glu Leu
 10                 15                  20                  25

gtg acg ggc agt agc tat gag agc ccg ccc ccc gac ttc cgg ggc cag      268
Val Thr Gly Ser Ser Tyr Glu Ser Pro Pro Pro Asp Phe Arg Gly Gln
 26                 31                  36                  41

tgg atc aat ctt cct gtc cta caa ctg aca aag gat ccc cta aag acc      316
Trp Ile Asn Leu Pro Val Leu Gln Leu Thr Lys Asp Pro Leu Lys|Thr
 42                 47                  52                  57
                                                          /
cct gga agg ctg gac cat ggc aca aga act gcc ttc atc cat cac cgg      364
Pro Gly Arg Leu Asp His Gly Thr Arg Thr Ala Phe Ile His His Arg
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 58                   63                   68                   73

gag caa gtg tgg aag aga tgc atc aac att tgg cgt gat gtg ggc ctt      412
Glu Gln Val Trp Lys Arg Cys Ile Asn Ile Trp Arg Asp Val Gly Leu
 74                  79                  84                  89

ttt ggg gtg cta aat gaa att gca aac tca gaa gaa gag gtg ttt gag      460
Phe Gly Val Leu Asn Glu Ile Ala Asn Ser Glu Glu Glu Val Phe Glu
 90                  95                 100                 105

tgg gtg aag acg gca tcc ggc tgg gcc ctg gca ctc tgt cga tgg gcc      508
Trp Val Lys Thr Ala Ser Gly Trp Ala Leu Ala Leu Cys Arg Trp Ala
106                 111                 116                 121

tct tcc ctc cat ggg tcc ctg ttc ccc cat ctg tct ctc agg agc gaa      556
Ser Ser Leu His Gly Ser Leu Phe Pro His Leu Ser Leu Arg Ser Glu
122                 127                 132                 137

gat ctg atc gct gaa ttt gcc caa gtc aca aat tgg tcc agc tgc tgc      604
Asp Leu Ile Ala Glu Phe Ala Gln Val Thr Asn Trp Ser Ser Cys Cys
138                 143                 148                 153

ttg cgt gtc ttt gca tgg cac ccc cac acc aac aag ttt gca gtg gcc      652
Leu Arg Val Phe Ala Trp His Pro His Thr Asn Lys Phe Ala Val Ala
154                 159                 164                 169

ctg cta gat gac tca gtc cgt gtg tat aat gcc agc agc acc ata gtc      700
Leu Leu Asp Asp Ser Val Arg Val Tyr Asn Ala Ser Ser Thr Ile Val
170                 175                 180                 185

ccc tcc ctg aag cac cgg ctg cag cga aat gtg gcg tct ctg gcc tgg      748
Pro Ser Leu Lys His Arg Leu Gln Arg Asn Val Ala Ser Leu Ala Trp
186                 191                 196                 201

aag ccc ctt agt gcc tct gtc ttg gct gtg gcc tgc cag agc tgc att      796
Lys Pro Leu Ser Ala Ser Val Leu Ala Val Ala Cys Gln Ser Cys Ile
202                 207                 212                 217

ctt atc tgg acc ctg gac cct acc tcc ttg tct acc cga ccc tct tct      844
Leu Ile Trp Thr Leu Asp Pro Thr Ser Leu Ser Thr Arg Pro Ser Ser
218                 223                 228                 233

ggc tgt gcc caa gtg ctg tct cac cct ggg cat aca cct gtt acc agc      892
Gly Cys Ala Gln Val Leu Ser His Pro Gly His Thr Pro Val Thr Ser
234                 239                 244                 249

ttg gcc tgg gcc ccc agt ggg ggg cgg ctg ctc tca gct tca ccc gtg      940
Leu Ala Trp Ala Pro Ser Gly Gly Arg Leu Leu Ser Ala Ser Pro Val
250                 255                 260                 265

gat gct gct atc cgg gta tgg gat gtc tca aca gag acc tgt gtc ccc      988
Asp Ala Ala Ile Arg Val Trp Asp Val Ser Thr Glu Thr Cys Val Pro
266                 271                 276                 281

ctt ccc tgg ttt cga gga ggt ggg gtg acc aac ctg ctc tgg tcc cca     1036
Leu Pro Trp Phe Arg Gly Gly Gly Val Thr Asn Leu Leu Trp Ser Pro
282                 287                 292                 297
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gac ggc agc aaa atc ctg gct acc act cct tca gct gtc ttt cga gtc      1084
Asp Gly Ser Lys Ile Leu Ala Thr Thr Pro Ser Ala Val Phe Arg Val
298                 303                 308                 313

tgg gag gcc cag atg tgg act tgt gag agg tgg cct act cta tca ggg      1132
Trp Glu Ala Gln Met Trp Thr Cys Glu Arg Trp Pro Thr Leu Ser Gly
314                 319                 324                 329

cgc tgt cag act ggc tgc tgg agc cca gat ggc agc cga ctg ctg ttc      1180
Arg Cys Gln Thr Gly Cys Trp Ser Pro Asp Gly Ser Arg Leu Leu Phe
330                 335                 340                 345

act gta ttg gga gag cca ctg att tac tcc ctg tct ttt cca gaa cgt      1228
Thr Val Leu Gly Glu Pro Leu Ile Tyr Ser Leu Ser Phe Pro Glu Arg
346                 351                 356                 361

tgt ggt gag gga aag ggt gcg ttg gag gtg caa agt cag caa cga ttg      1276
Cys Gly Glu Gly Lys Gly Ala Leu Glu Val Gln Ser Gln Gln Arg Leu
362                 367                 372                 377

tgg cag atc tgt ctg aga caa caa tac aga cac cag atg gtg agg aga      1324
Trp Gln Ile Cys Leu Arg Gln Gln Tyr Arg His Gln Met Val Arg Arg
378                 383                 388                 393

ggc ttg ggg gag agg ctc act cca tgg tct ggg acc cca gtg ggg aac      1372
Gly Leu Gly Glu Arg Leu Thr Pro Trp Ser Gly Thr Pro Val Gly Asn
394                 399                 404                 409

gtc tgg ctg tgc tta tga aaggaa agccaagggt acaggatggt aaaccagtca      1426
Val Trp Leu Cys Leu  *
410                 415

tcctcctttt tcgcactcga aacagccctg tgtttgagct ccttccctgt ggcattatcc    1486

aggggggagcc aggagcccag ccccagctca tcactttcca tccttccttc aacaaagggg   1546

ccctgctcag tgtgggctgg tccacaggcc gaattgccca catcccgctg tactttgtca    1606

atgcccagtt tccacgtttt agcccagtgc ttgggcgggc ccaggaaccc cctgctgggg    1666

gtggaggctc tattcatgac ctgcccctct ttactgagac atccccaacc tctgcccctt    1726

gggaccctct cccagggcca ccacctgttc tgccccactc cccacattcc cacctctaag    1786

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                                        Met Ala Thr Val Gln Glu
                                         1

aag gct gct gcg ctg aac ctc tcg gct ctc cac agc ccc gcg cac agg      101
Lys Ala Ala Ala Leu Asn Leu Ser Ala Leu His Ser Pro Ala His Arg
  7                  12                  17                  22

cct ccg ggt ttc agt gta gct cag aag cca ttt gga gcc acg tat gta      149
Pro Pro Gly Phe Ser Val Ala Gln Lys Pro Phe Gly Ala Thr Tyr Val
 23                  28                  33                  38

tgg agc agc atc ata aac act ctt caa aca caa gtg gaa gtg aaa aaa      197
Trp Ser Ser Ile Ile Asn Thr Leu Gln Thr Gln Val Glu Val Lys Lys
 39                  44                  49                  54

cga agg cac cgt tta aaa cga cat aat gac tgc ttt gtt ggt tca gaa      245
Arg Arg His Arg Leu Lys Arg His Asn Asp Cys Phe Val Gly Ser Glu
 55                  60                  65                  70

gct gtg gat gtc att ttt tct cac cta att cag aat aag tat ttt ggt      293
Ala Val Asp Val Ile Phe Ser His Leu Ile Gln Asn Lys Tyr Phe Gly
 71                  76                  81                  86

gat gta gat att cct cga gcc aaa gtg gtg aga gtg tgt caa gcg ctt      341
Asp Val Asp Ile Pro Arg Ala Lys Val Val Arg Val Cys Gln Ala Leu
 87                  92                  97                 102

atg gac tac aaa gta ttt gaa gca gtt cca acc aaa gtc ttt gga aaa      389
Met Asp Tyr Lys Val Phe Glu Ala Val Pro Thr Lys Val Phe Gly Lys
103                 108                 113                 118

gac aaa aaa cct aca ttt gaa gat agt agt tgc agc ctt tat aga ttc      437
Asp Lys Lys Pro Thr Phe Glu Asp Ser Ser Cys Ser Leu Tyr Arg Phe
119                 124                 129                 134

acc aca ata cct aac caa gac agt cag tta ggc aaa gag aac aaa cta      485
Thr Thr Ile Pro Asn Gln Asp Ser Gln Leu Gly Lys Glu Asn Lys Leu
135                 140                 145                 150

tat tca cct gcc agg tat gca gat gca tta ttt aag tca tcc gat atc      533
Tyr Ser Pro Ala Arg Tyr Ala Asp Ala Leu Phe Lys Ser Ser Asp Ile
151                 156                 161                 166

aga tca gcc agt tta gag gac ctg tgg gaa aat ctg agt tta aag cct      581
Arg Ser Ala Ser Leu Glu Asp Leu Trp Glu Asn Leu Ser Leu Lys Pro
167                 172                 177                 182

gcc aac tcc cct cat gta aat atc tct aca acc ttg tct cca caa gtt      629
Ala Asn Ser Pro His Val Asn Ile Ser Thr Thr Leu Ser Pro Gln Val
183                 188                 193                 198

att aat gaa gtg tgg caa gaa gaa aca att ggg cgt cta cta caa ctt      677
Ile Asn Glu Val Trp Gln Glu Glu Thr Ile Gly Arg Leu Leu Gln Leu
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199                 204                 209                 214

gta gac ctt cca ctt ctt gac tcc tta ctg aaa cag caa gag gct gta      725
Val Asp Leu Pro Leu Leu Asp Ser Leu Leu Lys Gln Gln Glu Ala Val
215                 220                 225                 230

cct aaa att cct caa cct aag agg cag tcc acc atg gtc aac agc agt      773
Pro Lys Ile Pro Gln Pro Lys Arg Gln Ser Thr Met Val Asn Ser Ser
231                 236                 241                 246

aac tat ctg gat cga ggg att ctc aag gct tat agt gac tct cag gaa      821
Asn Tyr Leu Asp Arg Gly Ile Leu Lys Ala Tyr Ser Asp Ser Gln Glu
247                 252                 257                 262

gat gag tgg ctc tcg gca gca att gac tgt tta gaa tac ctt cca gac      869
Asp Glu Trp Leu Ser Ala Ala Ile Asp Cys Leu Glu Tyr Leu Pro Asp
263                 268                 273                 278

caa atg gtg gtg gaa ata agc aga agc ttt cct gag caa cca gac cga      917
Gln Met Val Val Glu Ile Ser Arg Ser Phe Pro Glu Gln Pro Asp Arg
279                 284                 289                 294

aca gac tta gtg aaa gaa ctt ctg ttt gat gcc att ggc aga tat tac      965
Thr Asp Leu Val Lys Glu Leu Leu Phe Asp Ala Ile Gly Arg Tyr Tyr
295                 300                 305                 310

agt agt agg gaa cct ctg tta aat cac tta tct gac gtt cat aat gga     1013
Ser Ser Arg Glu Pro Leu Leu Asn His Leu Ser Asp Val His Asn Gly
311                 316                 321                 326

att gca gaa ctc tta gtg aat ggg aag acg gaa ata gct tta gaa gct     1061
Ile Ala Glu Leu Leu Val Asn Gly Lys Thr Glu Ile Ala Leu Glu Ala
327                 332                 337                 342

acc cag ctc ctt cta aag ctt tta gat ttc caa aat aga gaa gaa ttt     1109
Thr Gln Leu Leu Leu Lys Leu Leu Asp Phe Gln Asn Arg Glu Glu Phe
343                 348                 353                 358

aga aga cta ctg tat ttc atg gct gtt gca gca aat cct tct gag ttt     1157
Arg Arg Leu Leu Tyr Phe Met Ala Val Ala Ala Asn Pro Ser Glu Phe
359                 364                 369                 374

aaa tta cag aaa gaa agt gac aac cga atg gtt gtg aaa agg ata ttc     1205
Lys Leu Gln Lys Glu Ser Asp Asn Arg Met Val Val Lys Arg Ile Phe
375                 380                 385                 390

tca aaa gct att gtt gac aat aaa aat tta tcc aaa ggc aaa aca gat     1253
Ser Lys Ala Ile Val Asp Asn Lys Asn Leu Ser Lys Gly Lys Thr Asp
391                 396                 401                 406

ctt ctg gta ctc ttt tta atg gat cat cag aaa gat gtt ttt aag att     1301
Leu Leu Val Leu Phe Leu Met Asp His Gln Lys Asp Val Phe Lys Ile
407                 412                 417                 422

cct gga act cta cat aaa att gta agt gtt aag ctt atg gcc ata cag     1349
Pro Gly Thr Leu His Lys Ile Val Ser Val Lys Leu Met Ala Ile Gln
423                 428                 433                 438
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aac gga aga gat cca aat aga gat gca gga tat att tat tgc cag aga      1397
Asn Gly Arg Asp Pro Asn Arg Asp Ala Gly Tyr Ile Tyr Cys Gln Arg
439                 444                 449                 454

att gat caa cgt gac tat tcc aac aat aca gag aag aca acc aaa gat      1445
Ile Asp Gln Arg Asp Tyr Ser Asn Asn Thr Glu Lys Thr Thr Lys Asp
455                 460                 465                 470

gag ctg ttg aat tta cta aaa act ctt gat gag gat tca aaa ctt tct      1493
Glu Leu Leu Asn Leu Leu Lys Thr Leu Asp Glu Asp Ser Lys Leu Ser
471                 476                 481                 486

gcc aaa gag aag aaa aaa ttg cta ggt caa ttc tat aag tgt cac cca      1541
Ala Lys Glu Lys Lys Lys Leu Leu Gly Gln Phe Tyr Lys Cys His Pro
487                 492                 497                 502

gac atc ttt att gag cat ttt gga gac tga g tttttaatat ctgtatataa      1592
Asp Ile Phe Ile Glu His Phe Gly Asp  *
503                 508

gttgtgtatt ttaagaataa attatgtatc ctaaatatcc aatcacattt gtaagtgtgg   1652

aagctctaaa tttgaaactg tacttaataa aaattttttt gtataaaaaa aaaaaa       1708



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gcggccgctc gcgatctaga gccgagggca cgtgcatgcc ccctggttaa gagttgcagg    120

tagcggtagc g atg gac act ctg gat cga gta gta aag ccc aaa acg aaa     170
             Met Asp Thr Leu Asp Arg Val Val Lys Pro Lys Thr Lys
              1               5                  10

aga gcc aag aga ttc ctt gag aag aga gaa ccg aaa ctc aat gaa aat      218
Arg Ala Lys Arg Phe Leu Glu Lys Arg Glu Pro Lys Leu Asn Glu Asn
 14                 19                  24                  29

att aaa aat gcc atg ctg att aaa ggg gga aat gca aat gca aca gtg      266
Ile Lys Asn Ala Met Leu Ile Lys Gly Gly Asn Ala Asn Ala Thr Val
 30                 35                  40                  45

aca aaa gta ctt aaa gat gtg tat gca ctg aaa aaa cca tac agt gta      314
Thr Lys Val Leu Lys Asp Val Tyr Ala Leu Lys Lys Pro Tyr Ser Val
 46                 51                  56                  61
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cta tat aaa aag aaa aat att aca aga cct ttt gag gat cag aca tca        362
Leu Tyr Lys Lys Lys Asn Ile Thr Arg Pro Phe Glu Asp Gln Thr Ser
 62                 67                  72                  77

ctg gaa ttc ttt tca aag aag tca gat tgt tct tta ttc atg ttt ggc        410
Leu Glu Phe Phe Ser Lys Lys Ser Asp Cys Ser Leu Phe Met Phe Gly
 78                 83                  88                  93

tcc cat aat aag aag cgg cca aat aat cta gta ata ggt cgt atg tat        458
Ser His Asn Lys Lys Arg Pro Asn Asn Leu Val Ile Gly Arg Met Tyr
 94                 99                 104                 109

gac tac cat gtg ctg gat atg att gaa tta ggt att gag aat ttt gtc        506
Asp Tyr His Val Leu Asp Met Ile Glu Leu Gly Ile Glu Asn Phe Val
110                115                 120                 125

tct cta aaa gac att aag aac agt aaa tgt cct gag gga aca aaa ccc        554
Ser Leu Lys Asp Ile Lys Asn Ser Lys Cys Pro Glu Gly Thr Lys Pro
126                131                 136                 141

atg ctg ata ttt gct ggc gat gat ttc gat gta aca gaa gat tat aga        602
Met Leu Ile Phe Ala Gly Asp Asp Phe Asp Val Thr Glu Asp Tyr Arg
142                147                 152                 157

aga cta aaa agt ctt ctt att gat ttc ttc aga ggc ccc aca gta tca        650
Arg Leu Lys Ser Leu Leu Ile Asp Phe Phe Arg Gly Pro Thr Val Ser
158                163                 168                 173

aat atc cgc ctg gct gga tta gag tat gtt ctg cac ttc act gca ctg        698
Asn Ile Arg Leu Ala Gly Leu Glu Tyr Val Leu His Phe Thr Ala Leu
174                179                 184                 189

aat ggg aag att tac ttt cga agc tat aag ttg ctg ttg aag aaa tct        746
Asn Gly Lys Ile Tyr Phe Arg Ser Tyr Lys Leu Leu Leu Lys Lys Ser
190                195                 200                 205

ggt tgc aga aca cca cgg att gaa ttg gaa gag atg gga ccc tca ttg        794
Gly Cys Arg Thr Pro Arg Ile Glu Leu Glu Glu Met Gly Pro Ser Leu
206                211                 216                 221

gat ctg gtt ctg agg agg aca cac ctg gca tcg gat gac ctt tat aaa        842
Asp Leu Val Leu Arg Arg Thr His Leu Ala Ser Asp Asp Leu Tyr Lys
222                227                 232                 237

tta tct atg aaa atg cca aaa gct ctc aag cca aag aag aag aaa aat        890
Leu Ser Met Lys Met Pro Lys Ala Leu Lys Pro Lys Lys Lys Lys Asn
238                243                 248                 253

att tcc cat gat act ttt ggt aca act tat gga agg att cat atg cag        938
Ile Ser His Asp Thr Phe Gly Thr Thr Tyr Gly Arg Ile His Met Gln
254                259                 264                 269

aag caa gac cta agc aaa cta caa acc agg aaa atg aag ggg ttg aag        986
Lys Gln Asp Leu Ser Lys Leu Gln Thr Arg Lys Met Lys Gly Leu Lys
270                275                 280                 285
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aag cga cct gca gaa agg ata aca gaa gac cac gag aaa aag tca aaa      1034
Lys Arg Pro Ala Glu Arg Ile Thr Glu Asp His Glu Lys Lys Ser Lys
286                 291                 296                 301

aga att aaa aaa aat tga tggaac ttagccagcc actattattt cattgtgttc      1088
Arg Ile Lys Lys Asn  *
302                 307

tacttaagag aattatcaag catcaatcca ttcagagttt cttataagat cttattatat   1148

atttttataa catgataatt ttacgatata ttattatgaa cagtaatata ctagtattaa   1208

gtgtaaagta agccttttat ttgagacatt acaccctggt gtgccatttt ctcttgtgat   1268

atcccctgcc ctccacaaat tcttctttct cattgggtgg atggatgggt gaggagggat   1328

ctccataacc attgggattt ttttgaattt ctggccttag ctaaagaaag ccacagaaag   1388

ccggacccgc aggagctgtg taaacaatct cagtatgaat tacctggaaa gttaacctcc   1448

tctcccaaca tggatctaca ttctgatttt tattttctac ttttctttta ttttgcctga   1508

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agaaaaaaaa aaaa                                                     1582



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                         Met Leu Leu Trp Ser Pro Ala Cys Gln Ala
                          1               5

ttc aac ctg gac gtg gaa aag ctc aca gtg tac agc ggc ccc aag ggc      100
Phe Asn Leu Asp Val Glu Lys Leu Thr Val Tyr Ser Gly Pro Lys Gly
 11                 16                  21                  26

agc tac ttc ggc tac gcc gtg gac ttc cac ata ccc gac gcc cgc aca      148
Ser Tyr Phe Gly Tyr Ala Val Asp Phe His Ile Pro Asp Ala Arg Thr
 27                 32                  37                  42

gcg agt gtc ttg gtg ggg gcg ccc aaa gcc aac acc agc cag ccc gat      196
Ala Ser Val Leu Val Gly Ala Pro Lys Ala Asn Thr Ser Gln Pro Asp
 43                 48                  53                  58

atc gtg gaa ggg gga gcc gtc tat tac tgt cct tgg ccc gcg gag ggg      244
Ile Val Glu Gly Gly Ala Val Tyr Tyr Cys Pro Trp Pro Ala Glu Gly
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 59                  64                  69                  74

tct gcg cag tgc agg cag ata ccg ttt gac acc acc aac aac aga aag      292
Ser Ala Gln Cys Arg Gln Ile Pro Phe Asp Thr Thr Asn Asn Arg Lys
 75                  80                  85                  90

atc aga gtt aat gga acc aaa gaa cct atc gag ttc aaa tcc aat cag      340
Ile Arg Val Asn Gly Thr Lys Glu Pro Ile Glu Phe Lys Ser Asn Gln
 91                  96                 101                 106

tgg ttt gga gca aca gtg aaa gct cac aaa gga aaa gtt gtg gcc tgt      388
Trp Phe Gly Ala Thr Val Lys Ala His Lys Gly Lys Val Val Ala Cys
107                 112                 117                 122

gct cct tta tat cac tgg aga act ctt aaa ccg aca cca gaa aaa gga      436
Ala Pro Leu Tyr His Trp Arg Thr Leu Lys Pro Thr Pro Glu Lys Gly
123                 128                 133                 138

cca gtt ggc acc tgc tat gta gca att cag aac ttc agc gct tat gcc      484
Pro Val Gly Thr Cys Tyr Val Ala Ile Gln Asn Phe Ser Ala Tyr Ala
139                 144                 149                 154

gag ttc tct cct tgc gga aac agc aat gct gat ccg gaa ggc cag ggt      532
Glu Phe Ser Pro Cys Gly Asn Ser Asn Ala Asp Pro Glu Gly Gln Gly
155                 160                 165                 170

tac tgc caa gca gga ttt agt ctg gat ttt tat aag aat gga gac ctt      580
Tyr Cys Gln Ala Gly Phe Ser Leu Asp Phe Tyr Lys Asn Gly Asp Leu
171                 176                 181                 186

att gtg gga gga cct ggg agt ttc tac tgg caa gga caa gtg atc act      628
Ile Val Gly Gly Pro Gly Ser Phe Tyr Trp Gln Gly Gln Val Ile Thr
187                 192                 197                 202

gcc agt gtt gca gat atc att gca aat tac tca ttc aag gat atc ctc      676
Ala Ser Val Ala Asp Ile Ile Ala Asn Tyr Ser Phe Lys Asp Ile Leu
203                 208                 213                 218

agg aaa ctg gca gga gaa aag cag acg gaa gtg gct cca gct tcc tat      724
Arg Lys Leu Ala Gly Glu Lys Gln Thr Glu Val Ala Pro Ala Ser Tyr
219                 224                 229                 234

gat gac agt tac ctt gga tac tca gtt gct gct ggg gag ttt act ggg      772
Asp Asp Ser Tyr Leu Gly Tyr Ser Val Ala Ala Gly Glu Phe Thr Gly
235                 240                 245                 250

gat tct cag caa gaa ttg gtt gct gga att cca aga gga gca cag aat      820
Asp Ser Gln Gln Glu Leu Val Ala Gly Ile Pro Arg Gly Ala Gln Asn
251                 256                 261                 266

ttt gga tat gtt tcc atc att aac tcc tac gat atg acg ttt att cag      868
Phe Gly Tyr Val Ser Ile Ile Asn Ser Tyr Asp Met Thr Phe Ile Gln
267                 272                 277                 282

aat ttc acg gga gaa cag atg gca tct tat ttt gga tat acc gtt gtc      916
Asn Phe Thr Gly Glu Gln Met Ala Ser Tyr Phe Gly Tyr Thr Val Val
283                 288                 293                 298
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gta tca gat gtt aac agt gat gga ctg gat gat gtc ctg gtt ggg gca       964
Val Ser Asp Val Asn Ser Asp Gly Leu Asp Asp Val Leu Val Gly Ala
299                 304                 309                 314

cct ctc ttt atg gaa cgt gaa ttt gag agc aac ccc aga gaa gta ggg      1012
Pro Leu Phe Met Glu Arg Glu Phe Glu Ser Asn Pro Arg Glu Val Gly
315                 320                 325                 330

caa atc tac ctg tat ttg caa gtg agc tct ctc ctc ttc aga gac ccc      1060
Gln Ile Tyr Leu Tyr Leu Gln Val Ser Ser Leu Leu Phe Arg Asp Pro
331                 336                 341                 346

cag atc ctc act ggc acc gag acg ttt ggg aga ttc ggt agt gct atg      1108
Gln Ile Leu Thr Gly Thr Glu Thr Phe Gly Arg Phe Gly Ser Ala Met
347                 352                 357                 362

gca cac tta gga gac ctg aac caa gat ggc tac aat gac att gcc atc      1156
Ala His Leu Gly Asp Leu Asn Gln Asp Gly Tyr Asn Asp Ile Ala Ile
363                 368                 373                 378

gga gtg cct ttt gca ggc aag gat caa aga ggc aaa gtg ctc att tat      1204
Gly Val Pro Phe Ala Gly Lys Asp Gln Arg Gly Lys Val Leu Ile Tyr
379                 384                 389                 394

aat ggg aac aaa gat ggc tta aac acc aag cct tcc caa gtt ctg caa      1252
Asn Gly Asn Lys Asp Gly Leu Asn Thr Lys Pro Ser Gln Val Leu Gln
395                 400                 405                 410

gga gtg tgg gcc tca cat gct gtc cct tcc gga ttt ggc ttt act tta      1300
Gly Val Trp Ala Ser His Ala Val Pro Ser Gly Phe Gly Phe Thr Leu
411                 416                 421                 426

aga gga gat tca gac ata gac aag aat gat tac cca gat ttg att gtg      1348
Arg Gly Asp Ser Asp Ile Asp Lys Asn Asp Tyr Pro Asp Leu Ile Val
427                 432                 437                 442

ggt gca ttt gga aca gga aaa gtc gct gtt tac aga gca aga ccg gtt      1396
Gly Ala Phe Gly Thr Gly Lys Val Ala Val Tyr Arg Ala Arg Pro Val
443                 448                 453                 458

gtg act gta gat gcc cag ctt ctg ctg cac cca atg att atc aat ctt      1444
Val Thr Val Asp Ala Gln Leu Leu Leu His Pro Met Ile Ile Asn Leu
459                 464                 469                 474

gaa aat aaa act tgc cag gtt cca gac tct atg aca tct gct gcc tgc      1492
Glu Asn Lys Thr Cys Gln Val Pro Asp Ser Met Thr Ser Ala Ala Cys
475                 480                 485                 490

ttt tct tta aga gta tgt gca tct gtc aca ggc cag agc att gca aac      1540
Phe Ser Leu Arg Val Cys Ala Ser Val Thr Gly Gln Ser Ile Ala Asn
491                 496                 501                 506

aca ata gtc ttg atg gca gag gtg caa tta gat tcc ctg aaa cag aaa      1588
Thr Ile Val Leu Met Ala Glu Val Gln Leu Asp Ser Leu Lys Gln Lys
507                 512                 517                 522
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gga gct att aaa cgg acg ctc ttc ctt gat aac cat cag gct cat cgc      1636
Gly Ala Ile Lys Arg Thr Leu Phe Leu Asp Asn His Gln Ala His Arg
523                 528                 533                 538

gtc ttc cct ctt gtg ata aaa agg cag aaa tcc cac cag tgc cag gat      1684
Val Phe Pro Leu Val Ile Lys Arg Gln Lys Ser His Gln Cys Gln Asp
539                 544                 549                 554

ttc atc gtt tac ctt cga gat gaa act gaa ttc cga gat aaa tta tct      1732
Phe Ile Val Tyr Leu Arg Asp Glu Thr Glu Phe Arg Asp Lys Leu Ser
555                 560                 565                 570

cca atc aac att agt ttg aat tac agt ttg gac gaa tcc acc ttt aaa      1780
Pro Ile Asn Ile Ser Leu Asn Tyr Ser Leu Asp Glu Ser Thr Phe Lys
571                 576                 581                 586

gaa ggc ctg gaa gtg aaa cca ata ttg aac tac tac aga gaa aac att      1828
Glu Gly Leu Glu Val Lys Pro Ile Leu Asn Tyr Tyr Arg Glu Asn Ile
587                 592                 597                 602

gtt agt gaa cag gct cac att ctg gtg gac tgt gga gaa gac aat ctg      1876
Val Ser Glu Gln Ala His Ile Leu Val Asp Cys Gly Glu Asp Asn Leu
603                 608                 613                 618

tgt gtt cct gac ttg aag ctg tcg gct aga cca gat aag cat cag gta      1924
Cys Val Pro Asp Leu Lys Leu Ser Ala Arg Pro Asp Lys His Gln Val
619                 624                 629                 634

atc att gga gat gaa aat cac ctt atg ctc ata ata aat gca aga aat      1972
Ile Ile Gly Asp Glu Asn His Leu Met Leu Ile Ile Asn Ala Arg Asn
635                 640                 645                 650

gaa ggg gaa gga gca tat gaa gct gaa ctc ttt gta atg ata cca gaa      2020
Glu Gly Glu Gly Ala Tyr Glu Ala Glu Leu Phe Val Met Ile Pro Glu
651                 656                 661                 666

gag gca gat tat gtt gga atc gaa cgc aac aac aag gga ttt cga cca      2068
Glu Ala Asp Tyr Val Gly Ile Glu Arg Asn Asn Lys Gly Phe Arg Pro
667                 672                 677                 682

ctg agc tgt gag tac aag atg gaa aat gta acc agg atg gtg gtg tgt      2116
Leu Ser Cys Glu Tyr Lys Met Glu Asn Val Thr Arg Met Val Val Cys
683                 688                 693                 698

gac ctt ggg aac cct atg gtg tct gga aca aat tat tcc ctg ggc ctc      2164
Asp Leu Gly Asn Pro Met Val Ser Gly Thr Asn Tyr Ser Leu Gly Leu
699                 704                 709                 714

cga ttt gca gtt cca cgt ctt gag aaa aca aac atg agc att aac ttc      2212
Arg Phe Ala Val Pro Arg Leu Glu Lys Thr Asn Met Ser Ile Asn Phe
715                 720                 725                 730

gat ctc caa atc aga agt tcc aac aag gac aat cca gac agc aat ttt      2260
Asp Leu Gln Ile Arg Ser Ser Asn Lys Asp Asn Pro Asp Ser Asn Phe
731                 736                 741                 746

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Val Ser Leu Gln Ile Asn Ile Thr Ala Val Ala Gln Val Glu Ile Arg
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Gly Val Ser His Pro Pro Gln Ile Val Leu Pro Ile His Asn Trp Glu
763                 768                 773                 778

cca gaa gag gag ccc cac aaa gag gag gag gtt gga cca ttg gtg gaa      2404
Pro Glu Glu Glu Pro His Lys Glu Glu Glu Val Gly Pro Leu Val Glu
779                 784                 789                 794

cat att tat gag ctg cac aat att gga cca agt acc atc agt gac acc      2452
His Ile Tyr Glu Leu His Asn Ile Gly Pro Ser Thr Ile Ser Asp Thr
795                 800                 805                 810

atc ctg gag gtg ggc tgg cct ttc tct gcc cgg gat gaa ttt ctt ctc      2500
Ile Leu Glu Val Gly Trp Pro Phe Ser Ala Arg Asp Glu Phe Leu Leu
811                 816                 821                 826

tat att ttc cat att caa act ctg gga cct ctg cag tgc caa cca aat      2548
Tyr Ile Phe His Ile Gln Thr Leu Gly Pro Leu Gln Cys Gln Pro Asn
827                 832                 837                 842

cct aat atc aat cca cag gat ata aag cct gct gcc tcc cca gag gac      2596
Pro Asn Ile Asn Pro Gln Asp Ile Lys Pro Ala Ala Ser Pro Glu Asp
843                 848                 853                 858

acc cct gag ctc agc gcc ttt ttg cga aac tct act att cct cat ctt      2644
Thr Pro Glu Leu Ser Ala Phe Leu Arg Asn Ser Thr Ile Pro His Leu
859                 864                 869                 874

gtc agg aag agg gat gta cat gtg gtc gaa ttc cac aga cag agc cct      2692
Val Arg Lys Arg Asp Val His Val Val Glu Phe His Arg Gln Ser Pro
875                 880                 885                 890

gca aaa ata ctg aat tgt aca aat atc gag tgt tta caa atc tcc tgt      2740
Ala Lys Ile Leu Asn Cys Thr Asn Ile Glu Cys Leu Gln Ile Ser Cys
891                 896                 901                 906

gca gtg gga cga ctc gaa gga gga gaa agc gca gtc ctg aaa gtc agg      2788
Ala Val Gly Arg Leu Glu Gly Gly Glu Ser Ala Val Leu Lys Val Arg
907                 912                 917                 922

tca cga tta tgg gcc cac acc ttc ctc cag aga aaa aat gat ccc tat      2836
Ser Arg Leu Trp Ala His Thr Phe Leu Gln Arg Lys Asn Asp Pro Tyr
923                 928                 933                 938

gct ctt gca tcc ctg gtg tcc ttt gaa gtt aag aag atg cct tat aca      2884
Ala Leu Ala Ser Leu Val Ser Phe Glu Val Lys Lys Met Pro Tyr Thr
939                 944                 949                 954

gat cag cca gca aaa ctc cca gaa gga agc ata gca att aag aca tca      2932
Asp Gln Pro Ala Lys Leu Pro Glu Gly Ser Ile Ala Ile Lys Thr Ser
955                 960                 965                 970

gtt att tgg gca act ccg aat gtt tcc ttc tca atc cca tta tgg gta      2980
Val Ile Trp Ala Thr Pro Asn Val Ser Phe Ser Ile Pro Leu Trp Val
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971                 976                 981                 986

ata ata cta gca ata ctt ctt gga ttg ttg gtt ctc gcc att tta acc        3028
Ile Ile Leu Ala Ile Leu Leu Gly Leu Leu Val Leu Ala Ile Leu Thr
987                 992                 997                 1002

tta gct tta tgg aag tgt gga ttc ttt gac aga gcc aga cct cct cag        3076
Leu Ala Leu Trp Lys Cys Gly Phe Phe Asp Arg Ala Arg Pro Pro Gln
1003                1008                1013                1018

gag gac atg acc gac agg gaa cag ctg aca aat gac aag acc cct gag        3124
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1019                1024                1029                1034

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Ala  *
1035




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gtcctgctat ccttcgcttc ccccgcccca tgtggctgcg gggccgcggc ggcgctgccc       180

act atg gcc cgg aaa gta gtt agc agg aag cgg aaa gcg ccc gcc tcg        228
    Met Ala Arg Lys Val Val Ser Arg Lys Arg Lys Ala Pro Ala Ser
      1               5                   10

ccg gga gct ggg agc gac gct cag ggc ccg cag ttt ggc tgg gat cac        276
Pro Gly Ala Gly Ser Asp Ala Gln Gly Pro Gln Phe Gly Trp Asp His
 16                  21                  26                  31

tcg ctt cac aaa agg aaa aga ctt cct cct gtg aag aga tcc tta gta        324
Ser Leu His Lys Arg Lys Arg Leu Pro Pro Val Lys Arg Ser Leu Val
 32                  37                  42                  47

tac tac ttg aag aac cgg gaa gtc agg cta cag aat gaa acc agc tac        372
Tyr Tyr Leu Lys Asn Arg Glu Val Arg Leu Gln Asn Glu Thr Ser Tyr
 48                  53                  58                  63

tct cga gtg ttg cat ggt tat gca gca cag caa ctt ccc agt ctc ctg        420
Ser Arg Val Leu His Gly Tyr Ala Ala Gln Gln Leu Pro Ser Leu Leu
 64                  69                  74                  79
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aag gag aga gag ttt cac ctt ggg acc ctt aat aaa gtg ttt gca tct      468
Lys Glu Arg Glu Phe His Leu Gly Thr Leu Asn Lys Val Phe Ala Ser
 80                 85                  90                  95

cag tgg ttg aat cat agg caa gtg gtg tgt ggc aca aaa tgc aac acg      516
Gln Trp Leu Asn His Arg Gln Val Val Cys Gly Thr Lys Cys Asn Thr
 96                101                 106                 111

cta ttt gtc gta gat gtc cag aca agc cag atc acc aag atc ccc att      564
Leu Phe Val Val Asp Val Gln Thr Ser Gln Ile Thr Lys Ile Pro Ile
112                117                 122                 127

ctg aaa gac cgg gag cct gga ggt gtg acc cag cag ggc tgt ggt atc      612
Leu Lys Asp Arg Glu Pro Gly Gly Val Thr Gln Gln Gly Cys Gly Ile
128                133                 138                 143

cat gcc atc gag ctg aat cct tct aga aca ctg cta gcc act gga gga      660
His Ala Ile Glu Leu Asn Pro Ser Arg Thr Leu Leu Ala Thr Gly Gly
144                149                 154                 159

gac aac ccc aac agt ctt gcc atc tat cga cta cct acg ctg gat cct      708
Asp Asn Pro Asn Ser Leu Ala Ile Tyr Arg Leu Pro Thr Leu Asp Pro
160                165                 170                 175

gtg tgt gta gga gat gat gga cac aag gac tgg atc ttt tcc atc gca      756
Val Cys Val Gly Asp Asp Gly His Lys Asp Trp Ile Phe Ser Ile Ala
176                181                 186                 191

tgg atc agc gac act atg gca gtg tct ggc tca cgt gat ggt tct atg      804
Trp Ile Ser Asp Thr Met Ala Val Ser Gly Ser Arg Asp Gly Ser Met
192                197                 202                 207

gga ctc tgg gag gtg aca gat gat gtt ttg acc aaa agt gat gcg aga      852
Gly Leu Trp Glu Val Thr Asp Asp Val Leu Thr Lys Ser Asp Ala Arg
208                213                 218                 223

cac aat gtg tca cgg gtc cct gtg tat gca cac atc act cac aag gcc      900
His Asn Val Ser Arg Val Pro Val Tyr Ala His Ile Thr His Lys Ala
224                229                 234                 239

tta aag gac atc ccc aaa gaa gac aca aac cct gac aac tgc aag gtt      948
Leu Lys Asp Ile Pro Lys Glu Asp Thr Asn Pro Asp Asn Cys Lys Val
240                245                 250                 255

cgg gct ctg gcc ttc aac aac aag aac aag gaa ctg gga gca gtg tct      996
Arg Ala Leu Ala Phe Asn Asn Lys Asn Lys Glu Leu Gly Ala Val Ser
256                261                 266                 271

ctg gat ggc tac ttt cat ctc tgg aag gct gaa aat aca cta tct aag     1044
Leu Asp Gly Tyr Phe His Leu Trp Lys Ala Glu Asn Thr Leu Ser Lys
272                277                 282                 287

ctc ctc tcc acc aaa ctg cca tat tgc cgt gag aat gtg tgt ctg gct     1092
Leu Leu Ser Thr Lys Leu Pro Tyr Cys Arg Glu Asn Val Cys Leu Ala
288                293                 298                 303
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tat ggt agt gaa tgg tca gtt tat gca gtg ggc tcc caa gct cat gtc      1140
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304                 309                 314                 319

tcc ttc ttg gat cca cgg cag cca tca tac aac gtc aag tct gtc tgt      1188
Ser Phe Leu Asp Pro Arg Gln Pro Ser Tyr Asn Val Lys Ser Val Cys
320                 325                 330                 335

tcc agg gag cga ggc agt gga atc cgg tca gtg agt ttc tac gag cac      1236
Ser Arg Glu Arg Gly Ser Gly Ile Arg Ser Val Ser Phe Tyr Glu His
336                 341                 346                 351

atc atc act gtg gga aca ggg cag ggc tcc ctg ctg ttc tat gac atc      1284
Ile Ile Thr Val Gly Thr Gly Gln Gly Ser Leu Leu Phe Tyr Asp Ile
352                 357                 362                 367

cga gct cag aga ttt ctg gaa gag agg ctc tca gct tgt tat ggg tcc      1332
Arg Ala Gln Arg Phe Leu Glu Glu Arg Leu Ser Ala Cys Tyr Gly Ser
368                 373                 378                 383

aag ccc aga cta gca ggg gag aat ctg aaa cta acc act ggc aaa ggc      1380
Lys Pro Arg Leu Ala Gly Glu Asn Leu Lys Leu Thr Thr Gly Lys Gly
384                 389                 394                 399

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Trp Leu Asn His Asp Glu Thr Trp Arg Asn Tyr Phe Ser Asp Ile Asp
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Phe Phe Pro Asn Ala Val Tyr Thr His Cys Tyr Asp Ser Ser Gly Thr
416                 421                 426                 431

aaa ctc ttt gtg gca gga ggt ccc ctc cct tca ggg ctc cat gga aac      1524
Lys Leu Phe Val Ala Gly Gly Pro Leu Pro Ser Gly Leu His Gly Asn
432                 437                 442                 447

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Tyr Ala Gly Leu Trp Ser  *
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             1               5                   10

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Thr Asn Pro Leu Asn Lys Glu Leu Asp Trp Ala Ser Ile Asn Gly Phe
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tgc gag cag ctc aac gag gac ttt gag ggg cct cca ctc gcc acc cgg      264
Cys Glu Gln Leu Asn Glu Asp Phe Glu Gly Pro Pro Leu Ala Thr Arg
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ctg ctg gcc cac aag atc cag tcc cca cag gag tgg gag gcg atc cag      312
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cac gac gaa gtg ggc aag ttc cgc ttt ctc aac gag ctc atc aag gtc      408
His Asp Glu Val Gly Lys Phe Arg Phe Leu Asn Glu Leu Ile Lys Val
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gtg tct ccc aag tat ctg ggc tct cgg aca tcg gag aag gtg aag aac      456
Val Ser Pro Lys Tyr Leu Gly Ser Arg Thr Ser Glu Lys Val Lys Asn
 94                 99                 104                 109

aag atc ttg gag ctc ctc tac agc tgg aca gtg ggc ctg ccc gag gag      504
Lys Ile Leu Glu Leu Leu Tyr Ser Trp Thr Val Gly Leu Pro Glu Glu
110                115                 120                 125

gtg aaa atc gca gag gcc tac cag atg cta aag aag cag ggg att gta      552
Val Lys Ile Ala Glu Ala Tyr Gln Met Leu Lys Lys Gln Gly Ile Val
126                131                 136                 141

aag tcc gac ccc aag ctt cca gat gac act acc ttt ccc ctt cct cct      600
Lys Ser Asp Pro Lys Leu Pro Asp Asp Thr Thr Phe Pro Leu Pro Pro
142                147                 152                 157

cca cgg ccg aag aat gtg atc ttt gaa gat gag gag aaa tcc aag atg      648
Pro Arg Pro Lys Asn Val Ile Phe Glu Asp Glu Glu Lys Ser Lys Met
158                163                 168                 173
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ctg gcc cgc ctg ctg aag agc tcc cat ccc gaa gac ctc cgc gca gcc        696
Leu Ala Arg Leu Leu Lys Ser Ser His Pro Glu Asp Leu Arg Ala Ala
174                 179                 184                 189

aat aag ctc atc aaa gag atg gtg cag gag gac cag aag cgg atg gag        744
Asn Lys Leu Ile Lys Glu Met Val Gln Glu Asp Gln Lys Arg Met Glu
190                 195                 200                 205

aag atc tcg aag agg gtg aat gcc atc gag gag gtg aac aac aat gtg        792
Lys Ile Ser Lys Arg Val Asn Ala Ile Glu Glu Val Asn Asn Asn Val
206                 211                 216                 221

aaa ctg ctc acg gag atg gtg atg agc cac agc cag ggc ggc gca gca        840
Lys Leu Leu Thr Glu Met Val Met Ser His Ser Gln Gly Gly Ala Ala
222                 227                 232                 237

gct ggc agc agc gag gac ctc atg aag gaa ctg tac cag cgc tgt gag        888
Ala Gly Ser Ser Glu Asp Leu Met Lys Glu Leu Tyr Gln Arg Cys Glu
238                 243                 248                 253

cgg atg cgg ccc acg ctc ttc cga ctg gcg agt gac aca gag gac aat        936
Arg Met Arg Pro Thr Leu Phe Arg Leu Ala Ser Asp Thr Glu Asp Asn
254                 259                 264                 269

gat gag gcc tta gcg gag atc ctg cag gcc aat gac aac ctc acc cag        984
Asp Glu Ala Leu Ala Glu Ile Leu Gln Ala Asn Asp Asn Leu Thr Gln
270                 275                 280                 285

gtg atc aac ctg tat aag cag ctg gtg cgg ggt gag gag gtc aac ggt       1032
Val Ile Asn Leu Tyr Lys Gln Leu Val Arg Gly Glu Glu Val Asn Gly
286                 291                 296                 301

gat gcc aca gcc ggc tcc atc cct ggg agc acc tcg gcc ctg ctg gat       1080
Asp Ala Thr Ala Gly Ser Ile Pro Gly Ser Thr Ser Ala Leu Leu Asp
302                 307                 312                 317

ctc tca ggc ctg gat ctc ccg cct gcg ggc acc acc tac cca gct atg       1128
Leu Ser Gly Leu Asp Leu Pro Pro Ala Gly Thr Thr Tyr Pro Ala Met
318                 323                 328                 333

ccc acc cgc cct ggc gag cag gcc agc cct gag cag ccc agt gcc tca       1176
Pro Thr Arg Pro Gly Glu Gln Ala Ser Pro Glu Gln Pro Ser Ala Ser
334                 339                 344                 349

gtt tcc ctg ctt gac gac gag ctc atg tct ctg ggc ctc agt gac ccc       1224
Val Ser Leu Leu Asp Asp Glu Leu Met Ser Leu Gly Leu Ser Asp Pro
350                 355                 360                 365

aca ccc cct tca ggc cca agc ctg gat ggt acc gga tgg aac agc ttc       1272
Thr Pro Pro Ser Gly Pro Ser Leu Asp Gly Thr Gly Trp Asn Ser Phe
366                 371                 376                 381

cag tcg tcg gat gcc act gag ccc cca gcc cct gct ctg gcc cag gcc       1320
Gln Ser Ser Asp Ala Thr Glu Pro Pro Ala Pro Ala Leu Ala Gln Ala
382                 387                 392                 397
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ccc agt atg gaa agc cga ccc cca gcg cag aca tcc ctg cca gca agc      1368
Pro Ser Met Glu Ser Arg Pro Pro Ala Gln Thr Ser Leu Pro Ala Ser
398                 403                 408                 413

agc ggt ctg gac gac cta gac ctc ctg ggg aag acc ctc ctg cag cag      1416
Ser Gly Leu Asp Asp Leu Asp Leu Leu Gly Lys Thr Leu Leu Gln Gln
414                 419                 424                 429

tcg ctg ccc ccg gaa tcc cag caa gtg cgg tgg gag aag cag cag cca      1464
Ser Leu Pro Pro Glu Ser Gln Gln Val Arg Trp Glu Lys Gln Gln Pro
430                 435                 440                 445

acc ccc cgg ctc aca ctc cgg gac ctg cag aat aag agc agc agc tgc      1512
Thr Pro Arg Leu Thr Leu Arg Asp Leu Gln Asn Lys Ser Ser Ser Cys
446                 451                 456                 461

agc tcc ccc agc tcc agc gcc acc agc ctt ctc cac acc gtg tcc cca      1560
Ser Ser Pro Ser Ser Ser Ala Thr Ser Leu Leu His Thr Val Ser Pro
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gag ccc ccc agg cct ccg cag cag ccc gta cca acc gag ctc tca ctg      1608
Glu Pro Pro Arg Pro Pro Gln Gln Pro Val Pro Thr Glu Leu Ser Leu
478                 483                 488                 493

gcc agc atc act gtg ccc ctg gag tcc atc aaa ccc agc aac atc ctg      1656
Ala Ser Ile Thr Val Pro Leu Glu Ser Ile Lys Pro Ser Asn Ile Leu
494                 499                 504                 509

ccc gtg act gtg tat gac cag cac ggc ttc cgc atc ctc ttc cat ttt      1704
Pro Val Thr Val Tyr Asp Gln His Gly Phe Arg Ile Leu Phe His Phe
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gcc cgg gac cca ctg cca ggg cgc tcc gac gtg ctg gtg gtg gtg gtt      1752
Ala Arg Asp Pro Leu Pro Gly Arg Ser Asp Val Leu Val Val Val Val
526                 531                 536                 541

tcc atg ctg agc acc gcc ccc cag ccc atc cgc aac atc gtg ttc cag      1800
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542                 547                 552                 557

tca gct gtc ccc aag gtt atg aag gtg aag ctg cag cca ccc tcg ggc      1848
Ser Ala Val Pro Lys Val Met Lys Val Lys Leu Gln Pro Pro Ser Gly
558                 563                 568                 573

acg gag ctg cca gct ttt aac ccc atc gtc cac ccc tca gca atc acc      1896
Thr Glu Leu Pro Ala Phe Asn Pro Ile Val His Pro Ser Ala Ile Thr
574                 579                 584                 589

cag gtc ctg ctg ctt gcc aac ccc cag aag gag aag gtt cgc ctc cgc      1944
Gln Val Leu Leu Leu Ala Asn Pro Gln Lys Glu Lys Val Arg Leu Arg
590                 595                 600                 605

tac aag ctc acc ttc acc atg ggt gac cag acc tac aac gag atg ggg      1992
Tyr Lys Leu Thr Phe Thr Met Gly Asp Gln Thr Tyr Asn Glu Met Gly
606                 611                 616                 621

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cgggagattt tcaaaatggg agcccagagg caccgcccag gcctcggaag gtgtcaggga   180

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gaactttccg tggtttcagc gtcgtcgcct ggagcggcgg tttagagagc cgagcctgat     240

gggcgccaag gccggctggc tgcttggagc gctgcctcga agggactgcg tgaaggaagc     300

taatccggag aacccaggcc agagcctgga aat atg gcg acc tgc atc ggg gag     354
                                     Met Ala Thr Cys Ile Gly Glu
                                      1               5

aag atc gag gat ttt aaa gtt gga aat ctg ctt ggt aaa gga tca ttt       402
Lys Ile Glu Asp Phe Lys Val Gly Asn Leu Leu Gly Lys Gly Ser Phe
  8                 13                  18                  23

gct ggt gtc tac aga gct gag tcc att cac act ggt ttg gaa gtt gca       450
Ala Gly Val Tyr Arg Ala Glu Ser Ile His Thr Gly Leu Glu Val Ala
 24                 29                  34                  39

atc aaa atg ata gat aag aaa gcc atg tac aaa gca gga atg gta cag       498
Ile Lys Met Ile Asp Lys Lys Ala Met Tyr Lys Ala Gly Met Val Gln
 40                 45                  50                  55

aga gtc caa aat gag gtg aaa ata cat tgc caa ttg aaa cat cct tct       546
Arg Val Gln Asn Glu Val Lys Ile His Cys Gln Leu Lys His Pro Ser
 56                 61                  66                  71

atc ttg gag ctt tat aac tat ttt gaa gat agc aat tat gtg tat ctg       594
Ile Leu Glu Leu Tyr Asn Tyr Phe Glu Asp Ser Asn Tyr Val Tyr Leu
 72                 77                  82                  87

gta tta gaa atg tgc cat aat gga gaa atg aac agg tat cta aag aat       642
Val Leu Glu Met Cys His Asn Gly Glu Met Asn Arg Tyr Leu Lys Asn
 88                 93                  98                 103

aga gtg aaa ccc ttc tca gaa aat gaa gct cga cac ttc atg cac cag       690
Arg Val Lys Pro Phe Ser Glu Asn Glu Ala Arg His Phe Met His Gln
104                109                 114                 119

atc atc aca ggg atg ttg tat ctt cat tct cat ggt ata cta cac cgg       738
Ile Ile Thr Gly Met Leu Tyr Leu His Ser His Gly Ile Leu His Arg
120                125                 130                 135

gac ctc aca ctt tct aac ctc cta ctg act cgt aat atg aac atc aag       786
Asp Leu Thr Leu Ser Asn Leu Leu Leu Thr Arg Asn Met Asn Ile Lys
136                141                 146                 151

att gct gat ttt ggg ctg gca act caa ctg aaa atg cca cat gaa aag       834
Ile Ala Asp Phe Gly Leu Ala Thr Gln Leu Lys Met Pro His Glu Lys
152                157                 162                 167

cac tat aca tta tgt gga act cct aac tac att tca cca gaa att gcc       882
His Tyr Thr Leu Cys Gly Thr Pro Asn Tyr Ile Ser Pro Glu Ile Ala
168                173                 178                 183

act cga agt gca cat ggc ctt gaa tct gat gtt tgg tcc ctg ggc tgt       930
Thr Arg Ser Ala His Gly Leu Glu Ser Asp Val Trp Ser Leu Gly Cys
184                189                 194                 199
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atg ttt tat aca tta ctt atc ggg aga cca ccc ttc gac act gac aca       978
Met Phe Tyr Thr Leu Leu Ile Gly Arg Pro Pro Phe Asp Thr Asp Thr
200                 205                 210                 215

gtc aag aac aca tta aat aaa gta gta ttg gca gat tat gaa atg cca      1026
Val Lys Asn Thr Leu Asn Lys Val Val Leu Ala Asp Tyr Glu Met Pro
216                 221                 226                 231

act ttt ttg tca ata gag gcc aag gac ctt att cac cag tta ctt cgt      1074
Thr Phe Leu Ser Ile Glu Ala Lys Asp Leu Ile His Gln Leu Leu Arg
232                 237                 242                 247

aga aat cca gca gat cgt tta agt ctg tct tca gta ttg gac cat cct      1122
Arg Asn Pro Ala Asp Arg Leu Ser Leu Ser Ser Val Leu Asp His Pro
248                 253                 258                 263

ttt atg tcc cga aat tct tca aca aaa agt aaa gat tta gga act gtg      1170
Phe Met Ser Arg Asn Ser Ser Thr Lys Ser Lys Asp Leu Gly Thr Val
264                 269                 274                 279

gaa gac tca att gat agt ggg cat gcc aca att tct act gca att aca      1218
Glu Asp Ser Ile Asp Ser Gly His Ala Thr Ile Ser Thr Ala Ile Thr
280                 285                 290                 295

gct tct tcc agt acc agt ata agt ggt agt tta ttt gac aaa aga aga      1266
Ala Ser Ser Ser Thr Ser Ile Ser Gly Ser Leu Phe Asp Lys Arg Arg
296                 301                 306                 311

ctt ttg att ggt cag cca ctc cca aat aaa atg act gta ttt cca aag      1314
Leu Leu Ile Gly Gln Pro Leu Pro Asn Lys Met Thr Val Phe Pro Lys
312                 317                 322                 327

aat aaa agt tca act gat ttt tct tct tca gga gat gga aac agt ttt      1362
Asn Lys Ser Ser Thr Asp Phe Ser Ser Ser Gly Asp Gly Asn Ser Phe
328                 333                 338                 343

tat act cag tgg gga aat caa gaa acc agt aat agt gga agg gga aga      1410
Tyr Thr Gln Trp Gly Asn Gln Glu Thr Ser Asn Ser Gly Arg Gly Arg
344                 349                 354                 359

gta att caa gat gca gaa gaa agg cca cat tct cga tac ctt cgt aga      1458
Val Ile Gln Asp Ala Glu Glu Arg Pro His Ser Arg Tyr Leu Arg Arg
360                 365                 370                 375

gct tat tcc tct gat aga tct ggc act tct aat agt cag tct caa gca      1506
Ala Tyr Ser Ser Asp Arg Ser Gly Thr Ser Asn Ser Gln Ser Gln Ala
376                 381                 386                 391

aaa aca tat aca atg gaa cga tgt cac tca gca gaa atg ctt tca gtg      1554
Lys Thr Tyr Thr Met Glu Arg Cys His Ser Ala Glu Met Leu Ser Val
392                 397                 402                 407

tcc aaa aga tca gga gga ggt gaa aat gaa gag agg tac tca ccc aca      1602
Ser Lys Arg Ser Gly Gly Gly Glu Asn Glu Glu Arg Tyr Ser Pro Thr
408                 413                 418                 423

gac aac aat gcc aac att ttt aac ttc ttt aaa gaa aag aca tcc agt      1650
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Asp Asn Asn Ala Asn Ile Phe Asn Phe Phe Lys Glu Lys Thr Ser Ser
424                 429                 434                 439

agt tct gga tct ttt gaa aga cct gat aac aat caa gca ctc tcc aat      1698
Ser Ser Gly Ser Phe Glu Arg Pro Asp Asn Asn Gln Ala Leu Ser Asn
440                 445                 450                 455

cat ctt tgt cca gga aaa act cct ttt cca ttt gca gac ccg aca cct      1746
His Leu Cys Pro Gly Lys Thr Pro Phe Pro Phe Ala Asp Pro Thr Pro
456                 461                 466                 471

cag act gaa acc gta caa cag tgg ttt ggg aat ctg caa ata aat gct      1794
Gln Thr Glu Thr Val Gln Gln Trp Phe Gly Asn Leu Gln Ile Asn Ala
472                 477                 482                 487

cat tta aga aaa act act gaa tat gac agc atc agc cca aac cgg gac      1842
His Leu Arg Lys Thr Thr Glu Tyr Asp Ser Ile Ser Pro Asn Arg Asp
488                 493                 498                 503

ttc cag ggc cat cca gat ttg cag aag gac aca tca aaa aat gcc tgg      1890
Phe Gln Gly His Pro Asp Leu Gln Lys Asp Thr Ser Lys Asn Ala Trp
504                 509                 514                 519

act gat aca aaa gtc aaa aag aac tct gat gct tct gat aat gca cat      1938
Thr Asp Thr Lys Val Lys Lys Asn Ser Asp Ala Ser Asp Asn Ala His
520                 525                 530                 535

tct gta aaa cag caa aat acc atg aaa tat atg act gca ctt cac agt      1986
Ser Val Lys Gln Gln Asn Thr Met Lys Tyr Met Thr Ala Leu His Ser
536                 541                 546                 551

aaa cct gag ata atc caa caa gaa tgt gtt ttt ggc tca gat cct ctt      2034
Lys Pro Glu Ile Ile Gln Gln Glu Cys Val Phe Gly Ser Asp Pro Leu
552                 557                 562                 567

tct gaa cag agc aag act agg ggt atg gag cca cca tgg ggt tat cag      2082
Ser Glu Gln Ser Lys Thr Arg Gly Met Glu Pro Pro Trp Gly Tyr Gln
568                 573                 578                 583

aat cgt aca tta aga agc att aca tct ccg ttg gtt gct cac agg tta      2130
Asn Arg Thr Leu Arg Ser Ile Thr Ser Pro Leu Val Ala His Arg Leu
584                 589                 594                 599

aaa cca atc aga cag aaa acc aaa aag gct gtg gtg agc ata ctt gat      2178
Lys Pro Ile Arg Gln Lys Thr Lys Lys Ala Val Val Ser Ile Leu Asp
600                 605                 610                 615

tca gag gag gtg tgt gtg gag ctt gta aag gag tat gca tct caa gaa      2226
Ser Glu Glu Val Cys Val Glu Leu Val Lys Glu Tyr Ala Ser Gln Glu
616                 621                 626                 631

tat gtg aaa gaa gtt ctt cag ata tct agt gat gga aat acg atc act      2274
Tyr Val Lys Glu Val Leu Gln Ile Ser Ser Asp Gly Asn Thr Ile Thr
632                 637                 642                 647

att tat tat cca aat ggt ggt aga ggt ttt cct ctt gct gat aga cca      2322
Ile Tyr Tyr Pro Asn Gly Gly Arg Gly Phe Pro Leu Ala Asp Arg Pro
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ccc tca cct act gac aac atc agt agg tac agc ttt gac aat tta cca      2370
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664                 669                 674                 679

gaa aaa tac tgg cga aaa tat caa tat gct tcc agg ttt gta cag ctt      2418
Glu Lys Tyr Trp Arg Lys Tyr Gln Tyr Ala Ser Arg Phe Val Gln Leu
680                 685                 690                 695

gta aga tct aaa tct ccc aaa atc act tat ttt aca aga tat gct aaa      2466
Val Arg Ser Lys Ser Pro Lys Ile Thr Tyr Phe Thr Arg Tyr Ala Lys
696                 701                 706                 711

tgc att ttg atg gag aat tct cct ggt gct gat ttt gag gtt tgg ttt      2514
Cys Ile Leu Met Glu Asn Ser Pro Gly Ala Asp Phe Glu Val Trp Phe
712                 717                 722                 727

tat gat ggg gta aaa ata cac aaa aca gaa gat ttc att cag gtg att      2562
Tyr Asp Gly Val Lys Ile His Lys Thr Glu Asp Phe Ile Gln Val Ile
728                 733                 738                 743

gaa aag aca ggg aag tct tac act tta aaa agt gaa agt gaa gtt aat      2610
Glu Lys Thr Gly Lys Ser Tyr Thr Leu Lys Ser Glu Ser Glu Val Asn
744                 749                 754                 759

agc ttg aaa gag gag ata aaa atg tat atg gac cat gct aat gag ggt      2658
Ser Leu Lys Glu Glu Ile Lys Met Tyr Met Asp His Ala Asn Glu Gly
760                 765                 770                 775

cat cgt att tgt tta gca ctg gaa tcc ata att tca gaa gag gaa agg      2706
His Arg Ile Cys Leu Ala Leu Glu Ser Ile Ile Ser Glu Glu Glu Arg
776                 781                 786                 791

aaa act agg agt gct ccc ttt ttc cca ata atc ata gga aga aaa cct      2754
Lys Thr Arg Ser Ala Pro Phe Phe Pro Ile Ile Ile Gly Arg Lys Pro
792                 797                 802                 807

ggt agt act agt tca cct aag gcc tta tca cct cct cct tct gtg gat      2802
Gly Ser Thr Ser Ser Pro Lys Ala Leu Ser Pro Pro Pro Ser Val Asp
808                 813                 818                 823

tca aat tac cca acg aga gat aga gca tct ttc aac aga atg gtc atg      2850
Ser Asn Tyr Pro Thr Arg Asp Arg Ala Ser Phe Asn Arg Met Val Met
824                 829                 834                 839

cat agt gct gct tct cca aca cag gca cca atc ctt aat ccc tct atg      2898
His Ser Ala Ala Ser Pro Thr Gln Ala Pro Ile Leu Asn Pro Ser Met
840                 845                 850                 855

gtt aca aat gaa gga ctt ggt ctt aca act aca gct tct gga aca gac      2946
Val Thr Asn Glu Gly Leu Gly Leu Thr Thr Thr Ala Ser Gly Thr Asp
856                 861                 866                 871

atc tct tct aat agt cta aaa gat tgt ctt cct aaa tca gca caa ctt      2994
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agt gga gct gtg tgg gtt cag ttt aat gat ggg tcc cag ttg gtt gtg      3090
Ser Gly Ala Val Trp Val Gln Phe Asn Asp Gly Ser Gln Leu Val Val
904                 909                 914                 919

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Gln Ala Gly Val Ser Ser Ile Ser Tyr Thr Ser Pro Asn Gly Gln Thr
920                 925                 930                 935

act agg tat gga gaa aat gaa aaa tta cca gac tac atc aaa cag aaa      3186
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952                 957                 962                 967

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Asn Phe His  *
968

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Ile Arg Arg Leu Ala Ala Asp Phe Gln Arg Ala Gln Phe Ala Glu Ala
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acg cag agg ttg tcc gag cgg aac tgc att gag att gtt aat aaa ttg       208
Thr Gln Arg Leu Ser Glu Arg Asn Cys Ile Glu Ile Val Asn Lys Leu
 24                 29                  34                  39

att gct cag aaa cag cta gaa gta gtt cat aca ctc gat gga aag gaa       256
Ile Ala Gln Lys Gln Leu Glu Val Val His Thr Leu Asp Gly Lys Glu
 40                 45                  50                  55

tat att act cca gcc caa att agt aaa gaa atg aga gat gag cta cat       304
Tyr Ile Thr Pro Ala Gln Ile Ser Lys Glu Met Arg Asp Glu Leu His
 56                 61                  66                  71

gtc cga ggt ggt cga gta aac att gtt gat cta caa cag gta att aat       352
Val Arg Gly Gly Arg Val Asn Ile Val Asp Leu Gln Gln Val Ile Asn
 72                 77                  82                  87

gtg gac ctg att cat att gaa aat aga att ggt gac att att aaa tca       400
Val Asp Leu Ile His Ile Glu Asn Arg Ile Gly Asp Ile Ile Lys Ser
 88                 93                  98                 103

gaa aag cat gtt cag tta gtg ttg gga caa ctg ata gat gag aat tat       448
Glu Lys His Val Gln Leu Val Leu Gly Gln Leu Ile Asp Glu Asn Tyr
104                109                 114                 119

ttg gat cgg ttg gca gaa gag gtc aat gat aaa ttg caa gaa agt ggt       496
Leu Asp Arg Leu Ala Glu Glu Val Asn Asp Lys Leu Gln Glu Ser Gly
120                125                 130                 135

cag gtc acc ata tca gaa ctg tgt aaa act tat gat ctt cct ggg aac       544
Gln Val Thr Ile Ser Glu Leu Cys Lys Thr Tyr Asp Leu Pro Gly Asn
136                141                 146                 151

ttt ctg aca cag gca cta act cag cga ctt ggt aga att atc agt gga       592
Phe Leu Thr Gln Ala Leu Thr Gln Arg Leu Gly Arg Ile Ile Ser Gly
152                157                 162                 167

cat att gat ctt gat aat aga gga gta att ttt acg gaa gct ttt gta       640
His Ile Asp Leu Asp Asn Arg Gly Val Ile Phe Thr Glu Ala Phe Val
168                173                 178                 183

gct cga cat aaa gca cgt atc cgt gga cta ttc agt gct att acc cgg       688
Ala Arg His Lys Ala Arg Ile Arg Gly/Leu Phe Ser Ala Ile Thr Arg
184                189                 194                 199
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cct aca gct gtg aat tct ttg att tca aaa tat gga ttt cag gag cag       736
Pro Thr Ala Val Asn Ser Leu Ile Ser Lys Tyr Gly Phe Gln Glu Gln
200                 205                 210                 215

ctt ctt tac tct gtg ctt gag gaa ctt gtt aat agc gga cgc tta cga       784
Leu Leu Tyr Ser Val Leu Glu Glu Leu Val Asn Ser Gly Arg Leu Arg
216                 221                 226                 231

ggc act gtg gtt ggt ggg aga cag gat aaa gct gtg ttt gtc cct gac       832
Gly Thr Val Val Gly Gly Arg Gln Asp Lys Ala Val Phe Val Pro Asp
232                 237                 242                 247

atc tac tcc agg aca cag agt act tgg gtg gat tcc ttt ttc agg cag       880
Ile Tyr Ser Arg Thr Gln Ser Thr Trp Val Asp Ser Phe Phe Arg Gln
248                 253                 258                 263

aat ggc tat cta gaa ttt gat gct ttg tcc aga ctt gga atc cca gat       928
Asn Gly Tyr Leu Glu Phe Asp Ala Leu Ser Arg Leu Gly Ile Pro Asp
264                 269                 274                 279

gct gta agc tac ata aag aaa aga tat aag act aca caa ctc ttg ttt       976
Ala Val Ser Tyr Ile Lys Lys Arg Tyr Lys Thr Thr Gln Leu Leu Phe
280                 285                 290                 295

ttg aaa gca gct tgt gtt ggt caa gga ctt gtg gat caa gtg gaa gca      1024
Leu Lys Ala Ala Cys Val Gly Gln Gly Leu Val Asp Gln Val Glu Ala
296                 301                 306                 311

tca gta gaa gaa gcc atc agc tct gga aca tgg gtt gat att gca cct      1072
Ser Val Glu Glu Ala Ile Ser Ser Gly Thr Trp Val Asp Ile Ala Pro
312                 317                 322                 327

ctg cta ccc act tct tta tca gtt gaa gat gct gcc ata ttg ctt cag      1120
Leu Leu Pro Thr Ser Leu Ser Val Glu Asp Ala Ala Ile Leu Leu Gln
328                 333                 338                 343

cag gtg atg agg gca ttc agc aaa cag gcc tca act gta gtc ttt agc      1168
Gln Val Met Arg Ala Phe Ser Lys Gln Ala Ser Thr Val Val Phe Ser
344                 349                 354                 359

gac act gtt gta gtc agt gaa aaa ttt ata aat gac tgt aca gaa ctg      1216
Asp Thr Val Val Val Ser Glu Lys Phe Ile Asn Asp Cys Thr Glu Leu
360                 365                 370                 375

ttc cgt gag ctg atg cac cag aaa gct gaa aag gaa atg aaa aat aat      1264
Phe Arg Glu Leu Met His Gln Lys Ala Glu Lys Glu Met Lys Asn Asn
376                 381                 386                 391

cct gtg cat tta atc act gaa gaa gat ctg aaa caa atc tcc act tta      1312
Pro Val His Leu Ile Thr Glu Glu Asp Leu Lys Gln Ile Ser Thr Leu
392                 397                 402                 407

gaa agc gtt agt aca agt aaa aaa aaa aaa aaa aat gag cga aga agg      1360
Glu Ser Val Ser Thr Ser Lys Lys Lys Lys Lys Asn Glu Arg Arg Arg
408                 413                 418                 423

aaa gca aca gag ggc agt gga agc atg aga gga gga ggt ggg ggc aat      1408
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Lys Ala Thr Glu Gly Ser Gly Ser Met Arg Gly Gly Gly Gly Gly Asn
424                 429                 434                 439

gcc aga gag tac aaa att aaa aaa gtc aag aag aaa gga aga aaa gat      1456
Ala Arg Glu Tyr Lys Ile Lys Lys Val Lys Lys Lys Gly Arg Lys Asp
440                 445                 450                 455

gat gat agt gat gat gaa tct caa tca tcc cac act gga aag aag aag      1504
Asp Asp Ser Asp Asp Glu Ser Gln Ser Ser His Thr Gly Lys Lys Lys
456                 461                 466                 471

cca gag atc agt ttt atg ttc cag gat gag att gaa gat ttt tta aga      1552
Pro Glu Ile Ser Phe Met Phe Gln Asp Glu Ile Glu Asp Phe Leu Arg
472                 477                 482                 487

aaa cac ata caa gat gcc cct gag gag ttt att tcg gaa ctt gct gag      1600
Lys His Ile Gln Asp Ala Pro Glu Glu Phe Ile Ser Glu Leu Ala Glu
488                 493                 498                 503

tac tta ata aaa cct ctt aat aaa act tat ctc gag gtg gta cgt tca      1648
Tyr Leu Ile Lys Pro Leu Asn Lys Thr Tyr Leu Glu Val Val Arg Ser
504                 509                 514                 519

gta ttc atg tct tca aca act tct gct tct ggg acg ggc aga aaa cgc      1696
Val Phe Met Ser Ser Thr Thr Ser Ala Ser Gly Thr Gly Arg Lys Arg
520                 525                 530                 535

aca atc aag gac ttg caa gaa gaa gtt tca aac ctg tac aat aac att      1744
Thr Ile Lys Asp Leu Gln Glu Glu Val Ser Asn Leu Tyr Asn Asn Ile
536                 541                 546                 551

agg tta ttt gaa aaa ggg atg aag ttt ttt gca gat gac aca cag gct      1792
Arg Leu Phe Glu Lys Gly Met Lys Phe Phe Ala Asp Asp Thr Gln Ala
552                 557                 562                 567

gct ctt acc aaa cac ttg ctg aag tca gtg tgt act gat atc act aac      1840
Ala Leu Thr Lys His Leu Leu Lys Ser Val Cys Thr Asp Ile Thr Asn
568                 573                 578                 583

ctc att ttc aac ttc tta gct tcg gat tta atg atg gca gta gac gat      1888
Leu Ile Phe Asn Phe Leu Ala Ser Asp Leu Met Met Ala Val Asp Asp
584                 589                 594                 599

cct gca gcc att aca agt gaa ata aga aag aaa att tta agt aaa tta      1936
Pro Ala Ala Ile Thr Ser Glu Ile Arg Lys Lys Ile Leu Ser Lys Leu
600                 605                 610                 615

tca gaa gaa acc aaa gta gct ctt aca aaa ctc cat aac tct ctg aat      1984
Ser Glu Glu Thr Lys Val Ala Leu Thr Lys Leu His Asn Ser Leu Asn
616                 621                 626                 631

gaa aag agc ata gaa gat ttt att tct tgt ctg gat tct gca gca gaa      2032
Glu Lys Ser Ile Glu Asp Phe Ile Ser Cys Leu Asp Ser Ala Ala Glu
632                 637                 642                 647

gct tgt gat att atg gtg aaa agg gga gac aaa aaa agg gaa aga cag      2080
Ala Cys Asp Ile Met Val Lys Arg Gly Asp Lys Lys Arg Glu Arg Gln
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648                 653                 658                 663

ata ctg ttc caa cat cga caa gca ctg gct gaa cag cta aag gtc aca      2128
Ile Leu Phe Gln His Arg Gln Ala Leu Ala Glu Gln Leu Lys Val Thr
664                 669                 674                 679

gaa gac cct gct ctt att ctg cac ctc aca tca gtc ctg ttg ttt cag      2176
Glu Asp Pro Ala Leu Ile Leu His Leu Thr Ser Val Leu Leu Phe Gln
680                 685                 690                 695

ttt tca acc cac agc atg ctc cat gca cct gga aga tgt gtc cca cag      2224
Phe Ser Thr His Ser Met Leu His Ala Pro Gly Arg Cys Val Pro Gln
696                 701                 706                 711

atc att gct ttt ctt aat agt aaa att cca gag gat cag cat gct ctt      2272
Ile Ile Ala Phe Leu Asn Ser Lys Ile Pro Glu Asp Gln His Ala Leu
712                 717                 722                 727

ttg gta aag tat caa ggt ttg gtt gta aag cag cta gtc agt caa agt      2320
Leu Val Lys Tyr Gln Gly Leu Val Val Lys Gln Leu Val Ser Gln Ser
728                 733                 738                 743

aag aag act ggg cag gga gat tat ccc ttg aat aat gaa tta gac aaa      2368
Lys Lys Thr Gly Gln Gly Asp Tyr Pro Leu Asn Asn Glu Leu Asp Lys
744                 749                 754                 759

gaa caa gaa gat gtt gcc agt act act cgt aaa gag ctt caa gaa ctt      2416
Glu Gln Glu Asp Val Ala Ser Thr Thr Arg Lys Glu Leu Gln Glu Leu
760                 765                 770                 775

tct tca tcc att aaa gac ctt gtt ctc aaa tct agg aaa tca tct gtg      2464
Ser Ser Ser Ile Lys Asp Leu Val Leu Lys Ser Arg Lys Ser Ser Val
776                 781                 786                 791

acg gaa gag taa tga tcttaattta catttgtcat atagtaagca ttttccccca      2519
Thr Glu Glu  *
792

aggttgaagg tgagtggtca caaaaaagta gtcactatac aactcccctc tccctgcaaa   2579

aaccacctca tacacacaca attcagttaa aacagtagta ttgtattaaa tgtaaatctt   2639

aaaaagatgt gaatttttgt aaattgggtt cttcatggaa gtttttttcc acctgatttt   2699

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ttaagcagaa atttaaaatg tggtcttttt tttttaaaag aaacacttct gtgtcagaaa   2939

tgaaaataaa tcatgttttt tatttttaaa tagaaagcac ttcaaaacta aaatacagaa   2999

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tcacataata ctttgtaaat actagtgtga aaaacagata ggatgccttt tccagtggta   3359

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tcagtctacc tctactccat tctagacaaa gtattaatcc ttagtgaaag taattaatta   3719

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aagaatgccg tgtttcctgg atct   atg gag gga atc cca gga ttt cct gga      111
                             Met Glu Gly Ile Pro Gly Phe Pro Gly
                               1               5

aac cga gga tta atg ggc caa aag gga gaa att ggg cct cca gga cag      159
Asn Arg Gly Leu Met Gly Gln Lys Gly Glu Ile Gly Pro Pro Gly Gln
 10                  15                  20                  25

caa gga aaa aaa gga gcc cca ggg atg cct ggt tta atg gga agc aat      207
Gln Gly Lys Lys Gly Ala Pro Gly Met Pro Gly Leu Met Gly Ser Asn
 26                  31                  36                  41

ggc tca cca ggc cag cct gga aca ccg gga tct aag gga agc aaa ggt      255
Gly Ser Pro Gly Gln Pro Gly Thr Pro Gly Ser Lys Gly Ser Lys Gly
 42                  47                  52                  57

gaa cct gga att caa ggg atg cct ggg gct tct ggg ctc aag gga gaa      303
Glu Pro Gly Ile Gln Gly Met Pro Gly Ala Ser Gly Leu Lys Gly Glu
 58                  63                  68                  73

cca gga gca acg ggt tcc cca gga gaa cca gga tac atg ggt tta ccc      351
Pro Gly Ala Thr Gly Ser Pro Gly Glu Pro Gly Tyr Met Gly Leu Pro
 74                  79                  84                  89

ggg att caa gga aaa aag ggg gac aaa gga aat caa ggt gaa aaa ggt      399
Gly Ile Gln Gly Lys Lys Gly Asp Lys Gly Asn Gln Gly Glu Lys Gly
 90                  95                 100                 105

att cag ggt caa aag gga gaa aat gga aga cag gga att cca ggg caa      447
Ile Gln Gly Gln Lys Gly Glu Asn Gly Arg Gln Gly Ile Pro Gly Gln
106                 111                 116                 121

cag gga att caa ggc cat cat ggt gca aaa gga gag aga ggt gaa aag      495
Gln Gly Ile Gln Gly His His Gly Ala Lys Gly Glu Arg Gly Glu Lys
122                 127                 132                 137

gga gaa cct ggt gtc cga ggt gcc att gga tca aaa gga gaa tct ggg      543
Gly Glu Pro Gly Val Arg Gly Ala Ile Gly Ser Lys Gly Glu Ser Gly
138                 143                 148                 153

gtg gat ggc ttg atg ggg ccc gca ggt cct aag ggg caa cct ggg gat      591
Val Asp Gly Leu Met Gly Pro Ala Gly Pro Lys Gly Gln Pro Gly Asp
154                 159                 164                 169

cca ggt cct cag gga ccc cca ggt ttg gat ggg aag ccc gga aga gag      639
Pro Gly Pro Gln Gly Pro Pro Gly Leu Asp Gly Lys Pro Gly Arg Glu
170                 175                 180                 185

ttt tca gaa caa ttt att cga caa gtt tgc aca gat gta ata aga gcc      687
Phe Ser Glu Gln Phe Ile Arg Gln Val Cys Thr Asp Val Ile Arg Ala
186                 191                 196                 201

cag cta cca gtc tta ctt cag agt gga aga att aga aat tgt gat cat      735
Gln Leu Pro Val Leu Leu Gln Ser Gly Arg Ile Arg Asn Cys Asp His
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202                 207                 212                 217

tgc ctg tcc caa cat ggc tcc ccg ggt att cct ggg cca cct ggt ccg      783
Cys Leu Ser Gln His Gly Ser Pro Gly Ile Pro Gly Pro Pro Gly Pro
218                 223                 228                 233

ata ggc cca gag ggt ccc aga gga tta cct ggt ttg cca gga aga gat      831
Ile Gly Pro Glu Gly Pro Arg Gly Leu Pro Gly Leu Pro Gly Arg Asp
234                 239                 244                 249

ggt gtt cct gga tta gtg ggt gtc cct gga cgt cca ggt gtc aga gga      879
Gly Val Pro Gly Leu Val Gly Val Pro Gly Arg Pro Gly Val Arg Gly
250                 255                 260                 265

tta aaa ggc cta cca gga aga aat ggg gaa aaa ggg agc caa ggg ttt      927
Leu Lys Gly Leu Pro Gly Arg Asn Gly Glu Lys Gly Ser Gln Gly Phe
266                 271                 276                 281

ggg tat cct gga gaa caa ggt cct cct ggt ccc cca ggt cca gag ggc      975
Gly Tyr Pro Gly Glu Gln Gly Pro Pro Gly Pro Pro Gly Pro Glu Gly
282                 287                 292                 297

cct cct gga ata agc aaa gaa ggt cct cca gga gac cca ggt ctc cct     1023
Pro Pro Gly Ile Ser Lys Glu Gly Pro Pro Gly Asp Pro Gly Leu Pro
298                 303                 308                 313

ggc aaa gat gga gac cat gga aaa cct gga atc caa ggg caa cca ggc     1071
Gly Lys Asp Gly Asp His Gly Lys Pro Gly Ile Gln Gly Gln Pro Gly
314                 319                 324                 329

ccc cca ggc atc tgc gac cca tca cta tgt ttt agt gta att gcc aga     1119
Pro Pro Gly Ile Cys Asp Pro Ser Leu Cys Phe Ser Val Ile Ala Arg
330                 335                 340                 345

aga gat ccg ttc aga aaa gga cca aac tat tag tgtctgat gcctcattca     1170
Arg Asp Pro Phe Arg Lys Gly Pro Asn Tyr  *
346                 351                 356

gcagcctagg catggtgctt tttctgtggt cttttgcatc tcaggaagat aaccaacagt   1230

aatcccttga aaagaaactt aagtacctcg gcgtttttat tttttttttc ttatggaaaa   1290

aaatataaaa gatcacatat actgatttta aaggctcctc agtcatttgg agcccttgga   1350

ttagcagcat taattaaatc tcaagggttt cttgtaaagt ccatttatgt taatcaaagt   1410

tgaatataaa aatccaccat tgcctgttag ccagtcagtt ttagtcactg tgaaatattt   1470

cacattcagc ctccatgcag tagagatttg agtttaattt catgtccatg tgactttcat   1530

gtttcctatc tcatagctca tgctactaca taagccaaaa catgtatctc atcattggaa   1590

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cagtgtctca gccttgataa ggggcagtgg attgcctgtt gttcggtgtt gtgaatagca   1710

cctctgaata agattagagt gtttcttaat tcatttcaaa ctctaaaatt agattaatgg   1770
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tggtgctaag aaagagtatt aattactttg ggaatggtca aaattaacat taaaaacatt   1830

ttagacaaaa agtttcattg tacattcaaa gaaaatgtaa gtttggaagt actaaaagac   1890

tattttatac ttgttgatta atcggaatgt ttgttgtatg ccttcatttt ccatttcact   1950

tatatgtgta tgtccatata tgttaatttt cattgtagca aagctaatgg aaataaagct   2010

aatgctctag ttgaaagaaa aggaaaactc ctgaaatcct agaatgtctt gttattttta   2070

gctgactgta aaatattatg aacagtcttt gtgtattgtg cttaatgctt ttgtaagaaa   2130

cagaatttga aatatttcat ccttgtcatg ctcaaaattt tgttacatgc ttgttattca   2190

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                                                             Met
                                                              1

gaa gaa gcc tgt cag gtg cag aca act aag cga ggg gat cct cat gag     165
Glu Glu Ala Cys Gln Val Gln Thr Thr Lys Arg Gly Asp Pro His Glu
  2                   7                  12                  17

tta aga aac ata ttt cta cag tat gcc agt act gag gtt gat gga gag     213
Leu Arg Asn Ile Phe Leu Gln Tyr Ala Ser Thr Glu Val Asp Gly Glu
 18                  23                  28                  33

cgt tac atg acc cca gaa gac ttt gtt cag cgc tat ctt gga ctg tat     261
Arg Tyr Met Thr Pro Glu Asp Phe Val Gln Arg Tyr Leu Gly Leu Tyr
 34                  39                  44                  49

aat gat cca aat agt aac cca aag atc gtg cag ctc ttg gca gga gta     309
Asn Asp Pro Asn Ser Asn Pro Lys Ile Val Gln Leu Leu Ala Gly Val
 50                  55                  60                  65

gct gat caa acc aag gat ggg ttg atc tcc tat caa gag ttt ttg gca     357
Ala Asp Gln Thr Lys Asp Gly Leu Ile Ser Tyr Gln Glu Phe Leu Ala
 66                  71                  76                  81

ttt gaa tct gtt tta tgt gct cca gat tcc atg ttc ata gtg gct ttc     405
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Phe Glu Ser Val Leu Cys Ala Pro Asp Ser Met Phe Ile Val Ala Phe
 82                 87                  92                  97

cag ttg ttt gac aag agt gga aat gga gag gtg aca ttt gaa aat gtc      453
Gln Leu Phe Asp Lys Ser Gly Asn Gly Glu Val Thr Phe Glu Asn Val
 98                103                 108                 113

aaa gaa att ttt gga cag act att att cat cat cat atc cct ttt aac      501
Lys Glu Ile Phe Gly Gln Thr Ile Ile His His His Ile Pro Phe Asn
114                119                 124                 129

tgg gat tgt gaa ttt atc cga ctg cat ttt ggg cat aac cgg aag aag      549
Trp Asp Cys Glu Phe Ile Arg Leu His Phe Gly His Asn Arg Lys Lys
130                135                 140                 145

cat ctt aac tac aca gaa ttc acg cag ttt ctc cag gag ctg caa ttg      597
His Leu Asn Tyr Thr Glu Phe Thr Gln Phe Leu Gln Glu Leu Gln Leu
146                151                 156                 161

gaa cat gca aga caa gcc ttt gca ctc aaa gac aaa agc aaa agt ggc      645
Glu His Ala Arg Gln Ala Phe Ala Leu Lys Asp Lys Ser Lys Ser Gly
162                167                 172                 177

atg att tct ggt ctg gat ttc agt gac atc atg gtt acc att aga tct      693
Met Ile Ser Gly Leu Asp Phe Ser Asp Ile Met Val Thr Ile Arg Ser
178                183                 188                 193

cac atg ctt act cct ttt gtg gag gag aac tta gtt tca gca gct gga      741
His Met Leu Thr Pro Phe Val Glu Glu Asn Leu Val Ser Ala Ala Gly
194                199                 204                 209

gga agt atc tca cac cag gtt agc ttc tcc tac ttc aat gca ttt aac      789
Gly Ser Ile Ser His Gln Val Ser Phe Ser Tyr Phe Asn Ala Phe Asn
210                215                 220                 225

tcg tta ctg aat aac atg gag ctt gtt cgt aag ata tat agc act cta      837
Ser Leu Leu Asn Asn Met Glu Leu Val Arg Lys Ile Tyr Ser Thr Leu
226                231                 236                 241

gct ggc aca agg aaa gat gtt gaa gtc aca aag gag gaa ttt gcc cag      885
Ala Gly Thr Arg Lys Asp Val Glu Val Thr Lys Glu Glu Phe Ala Gln
242                247                 252                 257

agt gcc ata cgc tat gga caa gtc aca cca cta gaa att gat att cta      933
Ser Ala Ile Arg Tyr Gly Gln Val Thr Pro Leu Glu Ile Asp Ile Leu
258                263                 268                 273

tat cag ctt gca gac tta tat aat gct tca ggg cgc ttg act ttg gca      981
Tyr Gln Leu Ala Asp Leu Tyr Asn Ala Ser Gly Arg Leu Thr Leu Ala
274                279                 284                 289

gat att gag aga ata gcc cca ttg gct gag ggg gcc tta cct tac aac     1029
Asp Ile Glu Arg Ile Ala Pro Leu Ala Glu Gly Ala Leu Pro Tyr Asn
290                295                 300                 305

ctg gca gaa ctt cag aga cag cag tct cct ggg tta ggc agg cct atc     1077
Leu Ala Glu Leu Gln Arg Gln Gln Ser Pro Gly Leu Gly Arg Pro Ile
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306                     311                     316                     321

tgg ctc cag att gcc gag tct gct tac aga ttc act ctg ggc tca gtt        1125
Trp Leu Gln Ile Ala Glu Ser Ala Tyr Arg Phe Thr Leu Gly Ser Val
322                     327                     332                     337

gct gga gct gtg gga gcc act gca gtg tat cct ata gat ctg gtg aag        1173
Ala Gly Ala Val Gly Ala Thr Ala Val Tyr Pro Ile Asp Leu Val Lys
338                     343                     348                     353

acc cga atg caa aac cag cgt ggc tct ggc tct gtt gtt ggg gag cta        1221
Thr Arg Met Gln Asn Gln Arg Gly Ser Gly Ser Val Val Gly Glu Leu
354                     359                     364                     369

atg tac aaa aac agc ttt gac tgt ttt aag aaa gtc ttg cgt tat gag        1269
Met Tyr Lys Asn Ser Phe Asp Cys Phe Lys Lys Val Leu Arg Tyr Glu
370                     375                     380                     385

ggc ttc ttt gga ctc tac agg ggt ctg ata cca caa ctt ata ggg gtt        1317
Gly Phe Phe Gly Leu Tyr Arg Gly Leu Ile Pro Gln Leu Ile Gly Val
386                     391                     396                     401

gct cca gaa aag gcc att aaa ctg act gtt aat gat ttt gtt cgg gac        1365
Ala Pro Glu Lys Ala Ile Lys Leu Thr Val Asn Asp Phe Val Arg Asp
402                     407                     412                     417

aaa ttt acc aga aga gat ggc tct gtt cca ctt cca gca gaa gtt ctt        1413
Lys Phe Thr Arg Arg Asp Gly Ser Val Pro Leu Pro Ala Glu Val Leu
418                     423                     428                     433

gct gga ggc tgt gct gga ggc tct cag gtc att ttt acc aac cca ttg        1461
Ala Gly Gly Cys Ala Gly Gly Ser Gln Val Ile Phe Thr Asn Pro Leu
434                     439                     444                     449

gag ata gtg aag att cgt ctg caa gta gct gga gag atc acc acg gga        1509
Glu Ile Val Lys Ile Arg Leu Gln Val Ala Gly Glu Ile Thr Thr Gly
450                     455                     460                     465

ccc aga gtc agc gcc ctg aat gtg ctc cgg gac ttg gga att ttt ggt        1557
Pro Arg Val Ser Ala Leu Asn Val Leu Arg Asp Leu Gly Ile Phe Gly
466                     471                     476                     481

ctg tat aag ggt gcc aaa gcg tgt ttc ctc cga gac att ccc ttc tct        1605
Leu Tyr Lys Gly Ala Lys Ala Cys Phe Leu Arg Asp Ile Pro Phe Ser
482                     487                     492                     497

gca atc tat ttt cct gtt tat gct cat tgc aaa cta ctt ctg gct gat        1653
Ala Ile Tyr Phe Pro Val Tyr Ala His Cys Lys Leu Leu Leu Ala Asp
498                     503                     508                     513

gaa aat gga cac gtg gga ggt tta aat ctt ctt gca gct gga gcc atg        1701
Glu Asn Gly His Val Gly Gly Leu Asn Leu Leu Ala Ala Gly Ala Met
514                     519                     524                     529

gca ggt gtc cca gct gca tct ctg gtg acc cct gct gat gtc atc aag        1749
Ala Gly Val Pro Ala Ala Ser Leu Val Thr Pro Ala Asp Val Ile Lys
530                     535                     540                     545
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aca aga ctg cag gtg gct gcc cgc gct ggc cag acg aca tac agt ggt      1797
Thr Arg Leu Gln Val Ala Ala Arg Ala Gly Gln Thr Thr Tyr Ser Gly
546                 551                 556                 561

gtc atc gac tgt ttc agg aag att ctc cgg gaa gaa ggg ccc tca gca      1845
Val Ile Asp Cys Phe Arg Lys Ile Leu Arg Glu Glu Gly Pro Ser Ala
562                 567                 572                 577

ttt tgg aaa ggg act gca gct cga gtg ttt cga tcc tct ccc cag ttt      1893
Phe Trp Lys Gly Thr Ala Ala Arg Val Phe Arg Ser Ser Pro Gln Phe
578                 583                 588                 593

ggt gtt acc ttg gtc act tat gaa gtt ctc cag cgg tgg ttt tac att      1941
Gly Val Thr Leu Val Thr Tyr Glu Val Leu Gln Arg Trp Phe Tyr Ile
594                 599                 604                 609

gat ttt gga ggc ctc aaa ccc gct ggt tca gaa cca aca cct aag tca      1989
Asp Phe Gly Gly Leu Lys Pro Ala Gly Ser Glu Pro Thr Pro Lys Ser
610                 615                 620                 625

cgc att gca gac ctt cct cct gcc aac cct gat cac atc ggt gga tac      2037
Arg Ile Ala Asp Leu Pro Pro Ala Asn Pro Asp His Ile Gly Gly Tyr
626                 631                 636                 641

aga ctc gcc aca gcc acg ttt gca ggc atc gaa aac aaa ttt ggc ctt      2085
Arg Leu Ala Thr Ala Thr Phe Ala Gly Ile Glu Asn Lys Phe Gly Leu
642                 647                 652                 657

tat ctc ccg aaa ttt aag tct cct agt gtt gct gtg gtt cag cca aag      2133
Tyr Leu Pro Lys Phe Lys Ser Pro Ser Val Ala Val Val Gln Pro Lys
658                 663                 668                 673

gca gca gtg gca gcc act cag tga tgagacaact gttgagtgtg gcaaaatggc     2187
Ala Ala Val Ala Ala Thr Gln  *
674                 679

gccttgaaga aagagcctag gagagcagcc ctgtaatgta tccagtcagc tgcatggtac    2247

tgactgagct gaggagtcaa actcttcttt ctgtatgaca tatacatata cttgtttata    2307

aaataatcat ttgcccaggg aaaaaaccac aacgctgttt caagctttag tcttatgtgt    2367

tgaaatgttt ttgtaagcct tggcatgaat tagtgttcta gactctgctt tgcacagctt    2427

gcacttacag tgattgtaca tattgtacat ctttgtacag agacatcttg gcacctcatc    2487

ccaacaaatc acatttgtag aaatgtaatg cggttctgag tggcttgaaa tgtacagaat    2547

gttttgaaag tgttttatta agaatcacac aaaaataaat gtattaaaat taaattcatt    2607

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1               5                   10

aag ctc cgt tct ctt tta ccg cct gat cta cgg cta caa ttc tgg ctt      96
Lys Leu Arg Ser Leu Leu Pro Pro Asp Leu Arg Leu Gln Phe Trp Leu
17                  22                  27                  32

cat gcc cgc ctc caa aag tgc ttc ctc tcg agg ggt tgt ggt tct tac      144
His Ala Arg Leu Gln Lys Cys Phe Leu Ser Arg Gly Cys Gly Ser Tyr
33                  38                  43                  48

tgc gca ggc gca aaa gca agt cct ctt ccg ggc aaa atg gcg atg gga      192
Cys Ala Gly Ala Lys Ala Ser Pro Leu Pro Gly Lys Met Ala Met Gly
49                  54                  59                  64

cta atg tgc gga cgc cgg gag ctt ctg cgc ttg cta cag tcc ggg cgt      240
Leu Met Cys Gly Arg Arg Glu Leu Leu Arg Leu Leu Gln Ser Gly Arg
65                  70                  75                  80

cgg gtc cac agc gtc gca ggg ccc tcg caa tgg ctt ggg aaa ccg ctg      288
Arg Val His Ser Val Ala Gly Pro Ser Gln Trp Leu Gly Lys Pro Leu
81                  86                  91                  96

acc aca cgg ctc cta ttc cca gta gcc ccg tgc tgc tgt cgc cca cac      336
Thr Thr Arg Leu Leu Phe Pro Val Ala Pro Cys Cys Cys Arg Pro His
97                  102                 107                 112

tac ctc ttc ctt gcg gct tcc ggc ccc cgc agc ctc agt acc tct gct      384
Tyr Leu Phe Leu Ala Ala Ser Gly Pro Arg Ser Leu Ser Thr Ser Ala
113                 118                 123                 128

atc tct ttt gca gaa gtc cag gtt cag gcc cct cct gtt gtt gct gca      432
Ile Ser Phe Ala Glu Val Gln Val Gln Ala Pro Pro Val Val Ala Ala
129                 134                 139                 144

act ccc tca ccc aca gca gta cct gag gtg gct tct gga gag act gca      480
Thr Pro Ser Pro Thr Ala Val Pro Glu Val Ala Ser Gly Glu Thr Ala
145                 150                 155                 160

gat gta gtc caa act gct gca gag cag agc ttc gct gaa ctg ggg ctg      528
Asp Val Val Gln Thr Ala Ala Glu Gln Ser Phe Ala Glu Leu Gly Leu
161                 166                 171                 176

ggg tca tac acc cca gtg gga ctg atc cag aat tta ctg gaa ttt atg      576
Gly Ser Tyr Thr Pro Val Gly Leu Ile Gln Asn Leu Leu Glu Phe Met
177                 182                 187                 192
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cat gtt gat ctg ggc cta cct tgg tgg ggg gcc att gct gca tgt aca      624
His Val Asp Leu Gly Leu Pro Trp Trp Gly Ala Ile Ala Ala Cys Thr
193                 198                 203                 208

gtc ttt gcc cgc tgc ctg att ttt cct ctc atc gtg acg ggc cag cga      672
Val Phe Ala Arg Cys Leu Ile Phe Pro Leu Ile Val Thr Gly Gln Arg
209                 214                 219                 224

gag gca gcc agg atc cac aat cac ttg cca gag atc cag aag ttt tcc      720
Glu Ala Ala Arg Ile His Asn His Leu Pro Glu Ile Gln Lys Phe Ser
225                 230                 235                 240

agt cga atc aga gag gcc aag tta gca gga gac cat att gag tat tac      768
Ser Arg Ile Arg Glu Ala Lys Leu Ala Gly Asp His Ile Glu Tyr Tyr
241                 246                 251                 256

aag gct tcc tcg gag atg gca ctt tac cag aaa aaa cat ggt att aaa      816
Lys Ala Ser Ser Glu Met Ala Leu Tyr Gln Lys Lys His Gly Ile Lys
257                 262                 267                 272

ctc tat aaa cct ctc att ctc cct gtg act cag gcc cca atc ttc atc      864
Leu Tyr Lys Pro Leu Ile Leu Pro Val Thr Gln Ala Pro Ile Phe Ile
273                 278                 283                 288

tcc ttc ttc att gct ttg aga gag atg gcc aac ctt cct gtg ccc agc      912
Ser Phe Phe Ile Ala Leu Arg Glu Met Ala Asn Leu Pro Val Pro Ser
289                 294                 299                 304

ctg cag aca ggt ggc ctc tgg tgg ttc cag gat ctc acg gta tcc gat      960
Leu Gln Thr Gly Gly Leu Trp Trp Phe Gln Asp Leu Thr Val Ser Asp
305                 310                 315                 320

ccc atc tac ata tta cca ctg gca gtc act gct aca atg tgg gct gtt     1008
Pro Ile Tyr Ile Leu Pro Leu Ala Val Thr Ala Thr Met Trp Ala Val
321                 326                 331                 336

ctt gag cta ggt gct gag aca ggt gtg caa agt tct gac ctt cag tgg     1056
Leu Glu Leu Gly Ala Glu Thr Gly Val Gln Ser Ser Asp Leu Gln Trp
337                 342                 347                 352

atg aga aat gtc atc aga atg atg ccc ctg ata acc ttg ccc ata acc     1104
Met Arg Asn Val Ile Arg Met Met Pro Leu Ile Thr Leu Pro Ile Thr
353                 358                 363                 368

atg cat ttc ccc acg gca gtg ttt atg tac tgg ctc tcc tcc aat ttg     1152
Met His Phe Pro Thr Ala Val Phe Met Tyr Trp Leu Ser Ser Asn Leu
369                 374                 379                 384

ttt tcc ctg gtc caa gta tcc tgt ctc cgg att cca gca gta cgc act     1200
Phe Ser Leu Val Gln Val Ser Cys Leu Arg Ile Pro Ala Val Arg Thr
385                 390                 395                 400

gta ctt aaa atc ccc cag cgt gtt gta cat gac ctg gac aaa tta cct     1248
Val Leu Lys Ile Pro Gln Arg Val Val His Asp Leu Asp Lys Leu Pro
401                 406                 411                 416

cca cgg gaa ggc ttc cta gag agc ttc aaa aaa ggc tgg aaa aat gct     1296
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Pro Arg Glu Gly Phe Leu Glu Ser Phe Lys Lys Gly Trp Lys Asn Ala
417 422 427 432

gaa atg acg cgt cag ctg cga gag cgt gaa caa cgc atg cgg aat cag 1344
Glu Met Thr Arg Gln Leu Arg Glu Arg Glu Gln Arg Met Arg Asn Gln
433 438 443 448

ttg gag cta gca gcc agg ggt cct tta cga cag acc ttt acc cac aac 1392
Leu Glu Leu Ala Ala Arg Gly Pro Leu Arg Gln Thr Phe Thr His Asn
449 454 459 464

cct ctc cta caa cct gga aag gat aac cct ccc aat atc cct agc agc 1440
Pro Leu Leu Gln Pro Gly Lys Asp Asn Pro Pro Asn Ile Pro Ser Ser
465 470 475 480

agc agc aaa cca aag tca aag tat ccc tgg cac gac aca ctt ggc tga 1488
Ser Ser Lys Pro Lys Ser Lys Tyr Pro Trp His Asp Thr Leu Gly *
481 486 491 496

cttatgttct gtgcgcattc tggcaggaat tctgtctctt cagagactca tcctcaaaac 1548

aagacttgac actgtgtcct tgccccagtc ctaggaactg tggcacacag agatgttcat 1608

tttaaaaacg gatttcatga aacactcttg tacttatgtt tataagagag cactgggtag 1668

ccaagtgatc ttcccattca cagagttagt aaacctctgt actacaaaaa aaaaaaa 1725

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atacaaaagc tatccagcat ctttgggcag ccattgagat tatacggaac cagaagcaga 120

ttgccaacat tgaccgtatt acaaaatgtg aaacaactac attattcttg aacct atg 178
Met
1

gtg att ttt aca tca tta cac aga tat gtc att ttc att agt tgt atc 226
Val Ile Phe Thr Ser Leu His Arg Tyr Val Ile Phe Ile Ser Cys Ile
2 7 12 17

att gtt ata aac tgg tat atg tct cga gtc cac ggt atg cac cct aaa 274
Ile Val Ile Asn Trp Tyr Met Ser Arg Val His Gly Met His Pro Lys
18 23 28 33

gag acc acc cgt cag ctg agc tta gct gtg aaa gat ggt ctt att gtc 322

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Glu Thr Thr Arg Gln Leu Ser Leu Ala Val Lys Asp Gly Leu Ile Val
 34                 39                  44                  49

gaa act cta aca gtg ggc tgc aaa ggt tca aaa gct ggt att gaa caa      370
Glu Thr Leu Thr Val Gly Cys Lys Gly Ser Lys Ala Gly Ile Glu Gln
 50                 55                  60                  65

gaa gga tat tgg ttg cca gga gat gag att gac tgg gaa aca gaa aat      418
Glu Gly Tyr Trp Leu Pro Gly Asp Glu Ile Asp Trp Glu Thr Glu Asn
 66                 71                  76                  81

cat gac tgg tat tgt ttt gaa tgc cat ttg cct gga gag gtg ttg ata      466
His Asp Trp Tyr Cys Phe Glu Cys His Leu Pro Gly Glu Val Leu Ile
 82                 87                  92                  97

tgt gac ctg tgt ttt cgt gtg tat cat tcc aag tgt ttg tct gat gag      514
Cys Asp Leu Cys Phe Arg Val Tyr His Ser Lys Cys Leu Ser Asp Glu
 98                103                 108                 113

ttc agg ctt aga gac agc agt agt ccc tgg cag tgc cca gtt tgc agg      562
Phe Arg Leu Arg Asp Ser Ser Ser Pro Trp Gln Cys Pro Val Cys Arg
114                119                 124                 129

agc att aag aag aag aat aca aac aaa cag gag atg ggc aca tac ctc      610
Ser Ile Lys Lys Lys Asn Thr Asn Lys Gln Glu Met Gly Thr Tyr Leu
130                135                 140                 145

aga ttc att gtc tcc cgc atg aag gag agg gct ata gat ctt aat aaa      658
Arg Phe Ile Val Ser Arg Met Lys Glu Arg Ala Ile Asp Leu Asn Lys
146                151                 156                 161

aag ggg aag gac aat aaa cac ccg atg tac agg agg ctg gtg cac tca      706
Lys Gly Lys Asp Asn Lys His Pro Met Tyr Arg Arg Leu Val His Ser
162                167                 172                 177

gct gtg gac gtt ccc acc att caa gag aaa gtg aat gaa ggg aaa tac      754
Ala Val Asp Val Pro Thr Ile Gln Glu Lys Val Asn Glu Gly Lys Tyr
178                183                 188                 193

cga agt tat gaa gag ttc aaa gct gat gcc caa ttg ctt ctc cac aat      802
Arg Ser Tyr Glu Glu Phe Lys Ala Asp Ala Gln Leu Leu Leu His Asn
194                199                 204                 209

acc gtg att ttc tat gga gca gac agt gag caa gct gac att gcg agg      850
Thr Val Ile Phe Tyr Gly Ala Asp Ser Glu Gln Ala Asp Ile Ala Arg
210                215                 220                 225

atg cta tat aaa gac aca tgt cat gag ctg gat gaa ctg cag ctt tgc      898
Met Leu Tyr Lys Asp Thr Cys His Glu Leu Asp Glu Leu Gln Leu Cys
226                231                 236                 241

aag aat tgc ttt tac ttg tca aat gct cgt cct gac aac tgg ttc tgt      946
Lys Asn Cys Phe Tyr Leu Ser Asn Ala Arg Pro Asp Asn Trp Phe Cys
242                247                 252                 257

tat cct tgt ata cct aat cat gag ctg gtt tgg gct aaa atg aaa ggt      994
Tyr Pro Cys Ile Pro Asn His Glu Leu Val Trp Ala Lys Met Lys Gly
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258                 263                 268                 273

ttt ggg ttt tgg cca gcc aaa gtc atg cag aaa gaa gac aat caa gtc      1042
Phe Gly Phe Trp Pro Ala Lys Val Met Gln Lys Glu Asp Asn Gln Val
274                 279                 284                 289

gac gtt cgc ttc ttt ggc cac cac cac cag agg gcc tgg att cct tct      1090
Asp Val Arg Phe Phe Gly His His His Gln Arg Ala Trp Ile Pro Ser
290                 295                 300                 305

gaa aac att caa gat atc aca gtc aac att cat cgg ctg cac gtg aag      1138
Glu Asn Ile Gln Asp Ile Thr Val Asn Ile His Arg Leu His Val Lys
306                 311                 316                 321

cgc agt atg ggt tgg aaa aag gcc tgt gat gag ctg gag ctg cat cag      1186
Arg Ser Met Gly Trp Lys Lys Ala Cys Asp Glu Leu Glu Leu His Gln
322                 327                 332                 337

cgt ttc cta cga gaa ggg aga ttt tgg aaa tct aag aat gag gac cga      1234
Arg Phe Leu Arg Glu Gly Arg Phe Trp Lys Ser Lys Asn Glu Asp Arg
338                 343                 348                 353

ggt gag gaa gag gca gaa tcc agt atc tcc tcc acc agt aat gag cag      1282
Gly Glu Glu Glu Ala Glu Ser Ser Ile Ser Ser Thr Ser Asn Glu Gln
354                 359                 364                 369

cta aag gtc act caa gaa cca aga gca aag aaa gga cga cgt aat caa      1330
Leu Lys Val Thr Gln Glu Pro Arg Ala Lys Lys Gly Arg Arg Asn Gln
370                 375                 380                 385

agt gtg gag ccc aaa aag gaa gaa cca gag cct gaa aca gaa gca gta      1378
Ser Val Glu Pro Lys Lys Glu Glu Pro Glu Pro Glu Thr Glu Ala Val
386                 391                 396                 401

agt tct agc cag gaa ata ccc acg atg cct cag ccc atc gaa aaa gtc      1426
Ser Ser Ser Gln Glu Ile Pro Thr Met Pro Gln Pro Ile Glu Lys Val
402                 407                 412                 417

tcc gtg tca act cag aca aag aag tta agt gcc tct tca cca aga atg      1474
Ser Val Ser Thr Gln Thr Lys Lys Leu Ser Ala Ser Ser Pro Arg Met
418                 423                 428                 433

ctg cat cgg agc acc cag acc aca aac gac ggc gtg tgt cag agc atg      1522
Leu His Arg Ser Thr Gln Thr Thr Asn Asp Gly Val Cys Gln Ser Met
434                 439                 444                 449

tgc cat gac aaa tac acc aag atc ttc aat gac ttc aaa gac cgg atg      1570
Cys His Asp Lys Tyr Thr Lys Ile Phe Asn Asp Phe Lys Asp Arg Met
450                 455                 460                 465

aag tcg gac cac aag cgg gag aca gag cgt gtt gtc cga gaa gct ctg      1618
Lys Ser Asp His Lys Arg Glu Thr Glu Arg Val Val Arg Glu Ala Leu
466                 471                 476                 481

gag aag ctg cgt tct gaa atg gaa gaa gaa aag aga caa gct gta aat      1666
Glu Lys Leu Arg Ser Glu Met Glu Glu Glu Lys Arg Gln Ala Val Asn
482                 487                 492                 497
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aaa gct gta gcc aac atg cag ggt gag atg gac aga aaa tgt aag caa      1714
Lys Ala Val Ala Asn Met Gln Gly Glu Met Asp Arg Lys Cys Lys Gln
498                 503                 508                 513

gta aag gaa aag tgt aag gag gaa ttt gta gaa gaa atc aag aag ctg      1762
Val Lys Glu Lys Cys Lys Glu Glu Phe Val Glu Glu Ile Lys Lys Leu
514                 519                 524                 529

gca aca cag cac aag caa ctg att tct cag acc aag aag aag cag tgg      1810
Ala Thr Gln His Lys Gln Leu Ile Ser Gln Thr Lys Lys Lys Gln Trp
530                 535                 540                 545

tgc tac aac tgt gag gag gag gcc atg tac cac tgc tgc tgg aac aca      1858
Cys Tyr Asn Cys Glu Glu Glu Ala Met Tyr His Cys Cys Trp Asn Thr
546                 551                 556                 561

tcc tac tgc tcc atc aag tgc cag cag gag cac tgg cac gcg gag cac      1906
Ser Tyr Cys Ser Ile Lys Cys Gln Gln Glu His Trp His Ala Glu His
562                 567                 572                 577

aag cgc acc tgc cgc cgg aaa aga tga agctg gcccttcccg gagtcacccc      1958
Lys Arg Thr Cys Arg Arg Lys Arg  *
578                 583

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acatttttag gttttacaga gattttaacc tttaaacaac agatctttaa aaaacaggtg    2258

aatacaagtg agtttaacaa agaaacattt agaatagatc tgaatgtaag aactacagaa    2318

ctgtttcaga aataaaacat actaccttga tgtgacattt ttttcttaac cttgttgagc    2378

tggttttgtt cagcttaatt tactgttcaa aggcattatc tgttggtcac accagtgggt    2438

atatgattga atttagggaa cagggttgac acagcagggc tagtcctgca tatttttttct   2498

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ttattagctt tgatcttgta gtttaaaatt gcagggaact ggggtaatct tttactgagc    2618

tggatcttag agaaaatgaa tatttaaatt ttaaagtttg cacatttcat ctttgtccta    2678

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gatgccgtga tttgtaaaaa gtctgtattt tgcggaatgt ctggattaag aagcattacc 3038

aataggaatg gatcgatagt tgaataatga ttttttatac atagatatat aaaatacagc 3098

caggaaaact taaattactt ttcttttaaa atatctcaca atttatgtgg tatttttaaa 3158

gactgatctt agaccaagtc aaattcccat ttatcattt 3197

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atacaaaagc tatccagcat ctttgggcag ccattgagat tatacggaac cagaagcaga 120

ttgccaacat tgaccgtatt acaaaatgtg aaacaactac attattcttg aacct atg 178
Met
1

gtg att ttt aca tca tta cac aga tat gtc att ttc att agt tgt atc 226
Val Ile Phe Thr Ser Leu His Arg Tyr Val Ile Phe Ile Ser Cys Ile
2 7 12 17

att gtt ata aac tgg tat atg tct cga gtc cac ggt atg cac cct aaa 274
Ile Val Ile Asn Trp Tyr Met Ser Arg Val His Gly Met His Pro Lys
18 23 28 33

gag acc acc cgt cag ctg agc tta gct gtg aaa gat ggt ctt att gtc 322
Glu Thr Thr Arg Gln Leu Ser Leu Ala Val Lys Asp Gly Leu Ile Val
34 39 44 49

gaa act cta aca gtg ggc tgc aaa ggt tca aaa gct ggt att gaa caa 370
Glu Thr Leu Thr Val Gly Cys Lys Gly Ser Lys Ala Gly Ile Glu Gln
50 55 60 65

gaa gga tat tgg ttg cca gga gat gag att agc att aag aag aag aat 418
Glu Gly Tyr Trp Leu Pro Gly Asp Glu Ile Ser Ile Lys Lys Lys Asn
66 71 76 81

aca aac aaa cag gag atg ggc aca tac ctc aga ttc att gtc tcc cgc 466
Thr Asn Lys Gln Glu Met Gly Thr Tyr Leu Arg Phe Ile Val Ser Arg
82 87 92 97

atg aag gag agg gct ata gat ctt aat aaa aag ggg aag gac aat aaa 514
Met Lys Glu Arg Ala Ile Asp Leu Asn Lys Lys Gly Lys Asp Asn Lys

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 98                  103                 108                 113

cac ccg atg tac agg agg ctg gtg cac tca gct gtg gac gtt ccc acc      562
His Pro Met Tyr Arg Arg Leu Val His Ser Ala Val Asp Val Pro Thr
114                 119                 124                 129

att caa gag aaa gtg aat gaa ggg aaa tac cga agt tat gaa gag ttc      610
Ile Gln Glu Lys Val Asn Glu Gly Lys Tyr Arg Ser Tyr Glu Glu Phe
130                 135                 140                 145

aaa gct gat gcc caa ttg ctt ctc cac aat acc gtg att ttc tat gga      658
Lys Ala Asp Ala Gln Leu Leu Leu His Asn Thr Val Ile Phe Tyr Gly
146                 151                 156                 161

gca gac agt gag caa gct gac att gcg agg atg cta tat aaa gac aca      706
Ala Asp Ser Glu Gln Ala Asp Ile Ala Arg Met Leu Tyr Lys Asp Thr
162                 167                 172                 177

tgt cat gag ctg gat gaa ctg cag ctt tgc aag aat tgc ttt tac ttg      754
Cys His Glu Leu Asp Glu Leu Gln Leu Cys Lys Asn Cys Phe Tyr Leu
178                 183                 188                 193

tca aat gct cgt cct gac aac tgg ttc tgt tat cct tgt ata cct aat      802
Ser Asn Ala Arg Pro Asp Asn Trp Phe Cys Tyr Pro Cys Ile Pro Asn
194                 199                 204                 209

cat gag ctg gtt tgg gct aaa atg aaa ggt ttt ggg ttt tgg cca gcc      850
His Glu Leu Val Trp Ala Lys Met Lys Gly Phe Gly Phe Trp Pro Ala
210                 215                 220                 225

aaa gtc atg cag aaa gaa gac aat caa gtc gac gtt cgc ttc ttt ggc      898
Lys Val Met Gln Lys Glu Asp Asn Gln Val Asp Val Arg Phe Phe Gly
226                 231                 236                 241

cac cac cac cag agg gcc tgg att cct tct gaa aac att caa gat atc      946
His His His Gln Arg Ala Trp Ile Pro Ser Glu Asn Ile Gln Asp Ile
242                 247                 252                 257

aca gtc aac att cat cgg ctg cac gtg aag cgc agt atg ggt tgg aaa      994
Thr Val Asn Ile His Arg Leu His Val Lys Arg Ser Met Gly Trp Lys
258                 263                 268                 273

aag gcc tgt gat gag ctg gag ctg cat cag cgt ttc cta cga gaa ggg     1042
Lys Ala Cys Asp Glu Leu Glu Leu His Gln Arg Phe Leu Arg Glu Gly
274                 279                 284                 289

aga ttt tgg aaa tct aag aat gag gac cga ggt gag gaa gag gca gaa     1090
Arg Phe Trp Lys Ser Lys Asn Glu Asp Arg Gly Glu Glu Glu Ala Glu
290                 295                 300                 305

tcc agt atc tcc tcc acc agt aat gag cag cta aag gtc act caa gaa     1138
Ser Ser Ile Ser Ser Thr Ser Asn Glu Gln Leu Lys Val Thr Gln Glu
306                 311                 316                 321

cca aga gca aag aaa gga cga cgt aat caa agt gtg gag ccc aaa aag     1186
Pro Arg Ala Lys Lys Gly Arg Arg Asn Gln Ser Val Glu Pro Lys Lys
322                 327                 332                 337
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10037270.010402

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gaa gaa cca gag cct gaa aca gaa gca gta agt tct agc cag gaa ata       1234
Glu Glu Pro Glu Pro Glu Thr Glu Ala Val Ser Ser Ser Gln Glu Ile
338                 343                 348                 353

ccc acg atg cct cag ccc atc gaa aaa gtc tcc gtg tca act cag aca       1282
Pro Thr Met Pro Gln Pro Ile Glu Lys Val Ser Val Ser Thr Gln Thr
354                 359                 364                 369

aag aag tta agt gcc tct tca cca aga atg ctg cat cgg agc acc cag       1330
Lys Lys Leu Ser Ala Ser Ser Pro Arg Met Leu His Arg Ser Thr Gln
370                 375                 380                 385

acc aca aac gac ggc gtg tgt cag agc atg tgc cat gac aaa tac acc       1378
Thr Thr Asn Asp Gly Val Cys Gln Ser Met Cys His Asp Lys Tyr Thr
386                 391                 396                 401

aag atc ttc aat gac ttc aaa gac cgg atg aag tcg gac cac aag cgg       1426
Lys Ile Phe Asn Asp Phe Lys Asp Arg Met Lys Ser Asp His Lys Arg
402                 407                 412                 417

gag aca gag cgt gtt gtc cga gaa gct ctg gag aag ctg cgt tct gaa       1474
Glu Thr Glu Arg Val Val Arg Glu Ala Leu Glu Lys Leu Arg Ser Glu
418                 423                 428                 433

atg gaa gaa gaa aag aga caa gct gta aat aaa gct gta gcc aac atg       1522
Met Glu Glu Glu Lys Arg Gln Ala Val Asn Lys Ala Val Ala Asn Met
434                 439                 444                 449

cag ggt gag atg gac aga aaa tgt aag caa gta aag gaa aag tgt aag       1570
Gln Gly Glu Met Asp Arg Lys Cys Lys Gln Val Lys Glu Lys Cys Lys
450                 455                 460                 465

gag gaa ttt gta gaa gaa atc aag aag ctg gca aca cag cac aag caa       1618
Glu Glu Phe Val Glu Glu Ile Lys Lys Leu Ala Thr Gln His Lys Gln
466                 471                 476                 481

ctg att tct cag acc aag aag aag cag tgg tgc tac aac tgt gag gag       1666
Leu Ile Ser Gln Thr Lys Lys Lys Gln Trp Cys Tyr Asn Cys Glu Glu
482                 487                 492                 497

gag gcc atg tac cac tgc tgc tgg aac aca tcc tac tgc tcc atc aag       1714
Glu Ala Met Tyr His Cys Cys Trp Asn Thr Ser Tyr Cys Ser Ile Lys
498                 503                 508                 513

tgc cag cag gag cac tgg cac gcg gag cac aag cgc acc tgc cgc cgg       1762
Cys Gln Gln Glu His Trp His Ala Glu His Lys Arg Thr Cys Arg Arg
514                 519                 524                 529

aaa aga tga agctggc ccttcccgga gtcaccccga tgattactct tttcagacac       1818
Lys Arg  *
530

agcggttttt gtttccaaga agccaaaatt gtttagaatt tgcttcccat tttgcaccag     1878

cctttaaaca cttttcgtga agaaattttg cacagtagtt taaatctttt gttaatgctc     1938
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ctccgaagtt tttcaggggg taaaagtaac atcagtggag ggtattattt taaataaatt 1998

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gaatgaagaa taatgcatgt taattttctt gtattaaaga tgccgtgatt tgtaaaaagt 2838

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aataatgatt ttttatacat agatatataa aatacagcca ggaaaactta aattactttt 2958

cttttaaaat atctcacaat ttatgtggta tttttaaaga ctgatcttag accaagtcaa 3018

attcccattt atcattt 3035

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tgcctgccct gctccaggct ccacctgcgc cgccgatcgc ccgggtatcg cgggggccca 120

ggccagctga gtccgttttc cgcgccgggg tggcgcccct ccaaccgtcc taacgccggg 180

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ccggcagcaa ggagtgttcc tgggacctca gagaccaggc tcagagcctg acatccctgc     240

gaggggacag cctcatccgc ccaggccagt gggggtctct acaagtgccc aggctcaggt     300

gcagccccca gca    atg cat cgc cgg aga ctg gcc ctg ggt ctg ggg ttc     349
                  Met His Arg Arg Arg Leu Ala Leu Gly Leu Gly Phe
                    1               5                  10

tgc ctg ttg gcg ggc aca agc ctc agt gtc ctg tgg gtg tat ctt gag       397
Cys Leu Leu Ala Gly Thr Ser Leu Ser Val Leu Trp Val Tyr Leu Glu
 13                 18                  23                  28

aac tgg ctg cca gtc tcc tat gtc ccc tat tat ctc ccc tgc cca gag       445
Asn Trp Leu Pro Val Ser Tyr Val Pro Tyr Tyr Leu Pro Cys Pro Glu
 29                 34                  39                  44

atc ttc aac atg aag ctg cac tac aag agg gag aag cca ctc cag ccc       493
Ile Phe Asn Met Lys Leu His Tyr Lys Arg Glu Lys Pro Leu Gln Pro
 45                 50                  55                  60

gtg gta tgg tca cag tac cct cag ccc aag ctg ctg gag cac agg ccc       541
Val Val Trp Ser Gln Tyr Pro Gln Pro Lys Leu Leu Glu His Arg Pro
 61                 66                  71                  76

aca cag ctg ctg aca ctc aca ccc tgg ttg gcg ccc atc gtc tcc gag       589
Thr Gln Leu Leu Thr Leu Thr Pro Trp Leu Ala Pro Ile Val Ser Glu
 77                 82                  87                  92

gga acc ttc aac cca gag ctt ctg cag cac atc tac cag cca ctg aac       637
Gly Thr Phe Asn Pro Glu Leu Leu Gln His Ile Tyr Gln Pro Leu Asn
 93                 98                 103                 108

ctg acc att ggg gtc acg gtg ttt gcc gtg ggg aag tac act cat ttc       685
Leu Thr Ile Gly Val Thr Val Phe Ala Val Gly Lys Tyr Thr His Phe
109                114                 119                 124

atc cag tcc ttc ctg gag tca gcc gag gag ttc ttc atg cgt ggg tac       733
Ile Gln Ser Phe Leu Glu Ser Ala Glu Glu Phe Phe Met Arg Gly Tyr
125                130                 135                 140

cgg gtg cac tac tac atc ttc act gac aac cct gca gcc gtt ccc ggg       781
Arg Val His Tyr Tyr Ile Phe Thr Asp Asn Pro Ala Ala Val Pro Gly
141                146                 151                 156

gtc ccg ctg ggt ccc cac cgg ctt ctc agc tcc atc ccc atc cag ggt       829
Val Pro Leu Gly Pro His Arg Leu Leu Ser Ser Ile Pro Ile Gln Gly
157                162                 167                 172

cac tcc cac tgg gag gag aca tcc atg cgc cgg atg gag acc atc agc       877
His Ser His Trp Glu Glu Thr Ser Met Arg Arg Met Glu Thr Ile Ser
173                178                 183                 188

cag cac att gct aag agg gct cac cgg gag gtg gac tac ctc ttc tgc       925
Gln His Ile Ala Lys Arg Ala His Arg Glu Val Asp Tyr Leu Phe Cys
189                194                 199                 204

ctt gat gtg gac atg gtg ttt cgg aac ccg tgg ggc cct gag acc ttg       973
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Leu Asp Val Asp Met Val Phe Arg Asn Pro Trp Gly Pro Glu Thr Leu
205                 210                 215                 220

gga gac ctg gtg gct gcc att cac cca agc tac tac gcc gtt ccc cgc      1021
Gly Asp Leu Val Ala Ala Ile His Pro Ser Tyr Tyr Ala Val Pro Arg
221                 226                 231                 236

cag cag ttc ccc tat gag cgc agg cgt gtt tcc act gcc ttt gtg gca      1069
Gln Gln Phe Pro Tyr Glu Arg Arg Arg Val Ser Thr Ala Phe Val Ala
237                 242                 247                 252

gac agc gaa ggg gac ttc tat tat ggt ggg gca gtc ttc ggg ggg cag      1117
Asp Ser Glu Gly Asp Phe Tyr Tyr Gly Gly Ala Val Phe Gly Gly Gln
253                 258                 263                 268

gtg gcc agg gta tat gag ttt act agg ggc tgc cac atg gcc atc ctg      1165
Val Ala Arg Val Tyr Glu Phe Thr Arg Gly Cys His Met Ala Ile Leu
269                 274                 279                 284

gcg gac aag gcc aat ggc atc atg gct gcc tgg cgg gag gaa agc cac      1213
Ala Asp Lys Ala Asn Gly Ile Met Ala Ala Trp Arg Glu Glu Ser His
285                 290                 295                 300

ctg aac cgt cac ttc atc tca aac aag ccg tcc aag gtg ctg tcc ccc      1261
Leu Asn Arg His Phe Ile Ser Asn Lys Pro Ser Lys Val Leu Ser Pro
301                 306                 311                 316

gag tac ctc tgg gac gac agg aag ccc cag cca ccc agc ctg aag ctg      1309
Glu Tyr Leu Trp Asp Asp Arg Lys Pro Gln Pro Pro Ser Leu Lys Leu
317                 322                 327                 332

atc cgc ttt tct aca ctg gac aag gat atc agc tgc ctg agg agc tga      1357
Ile Arg Phe Ser Thr Leu Asp Lys Asp Ile Ser Cys Leu Arg Ser  *
333                 338                 343                 348

ccacggagct gggggttgcc atggatgggg acccaaagac ctgcagccac cagtgcttca    1417

ctagcgtgca gaccagccct gtcccgcctc cctgtcagtc aggcgaattc aaccggaaaa    1477

gggacgtgga aaggccactg tgaactgcag agggctgtgc acacagtagc acacaggatc    1537

tcacagtaac gcggcatggg aacagtgaga caggggaggg ggaggcgcag ttacaaaggc    1597

agggcccggc aggcttgcca cgttctgcag ccgtgccttt gcggggcagg ctctgaagcc    1657

tcagcccgac tcagagtgcc tgaaccg                                        1684


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ggagactttt cgttttcatt tacgctgcgg aaactgacgt tttgcctaa caccccatgt      180

aatgtaaacg tataggcttg agtacgtgtc aggccgcatg tgtagtgaac cctaaagctt     240

tcctaattgt agttagcatc gtccctaagc ggaacgattt tccgtgaac    atg att      295
                                                         Met Ile
                                                          1

tgt act ttt cta cga gcc gta cag tat acg gag aag ctg cac agg tcc      343
Cys Thr Phe Leu Arg Ala Val Gln Tyr Thr Glu Lys Leu His Arg Ser
  3                 8                  13                  18

tcg gca aag cga ttg ctt ttg cca tac atc gtg ctt aac aaa gcg tgc      391
Ser Ala Lys Arg Leu Leu Leu Pro Tyr Ile Val Leu Asn Lys Ala Cys
 19                24                  29                  34

ttg aag act gag ccc agt ttg aga tgt ggg ctt caa tat caa aag aaa      439
Leu Lys Thr Glu Pro Ser Leu Arg Cys Gly Leu Gln Tyr Gln Lys Lys
 35                40                  45                  50

acg ctg cga cct aga tgt att ctt gga gtc acc cag aaa acc atc tgg      487
Thr Leu Arg Pro Arg Cys Ile Leu Gly Val Thr Gln Lys Thr Ile Trp
 51                56                  61                  66

acg cag gga ccg agc ccc cga aaa gca aag gag gat agc agc acc caa      535
Thr Gln Gly Pro Ser Pro Arg Lys Ala Lys Glu Asp Ser Ser Thr Gln
 67                72                  77                  82

gtg tct gtg cac agg agt cag aga ggg gga acc gcc gtt cca aca tca      583
Val Ser Val His Arg Ser Gln Arg Gly Gly Thr Ala Val Pro Thr Ser
 83                88                  93                  98

caa tta gtg aat gaa gcc gga aga gat ttt acc tat tta ata gtg gtg      631
Gln Leu Val Asn Glu Ala Gly Arg Asp Phe Thr Tyr Leu Ile Val Val
 99               104                 109                 114

ctt ttt gga atc agc att aca ggt ggc ttg ttt tac acg att ttc aaa      679
Leu Phe Gly Ile Ser Ile Thr Gly Gly Leu Phe Tyr Thr Ile Phe Lys
115               120                 125                 130

gaa ctt ttt tct tca tcc agt cct agc aag ata tat ggg aga gcc tta      727
Glu Leu Phe Ser Ser Ser Ser Pro Ser Lys Ile Tyr Gly Arg Ala Leu
131               136                 141                 146

gaa aaa tgc aga tca cat cct gag gtg atc ggt gtc ttt ggt gag tct      775
Glu Lys Cys Arg Ser His Pro Glu Val Ile Gly Val Phe Gly Glu Ser
147               152                 157                 162

gtt aaa ggc tat ggg gag gtg aca agg cgg ggt cgc cgg cag cat gtc      823
Val Lys Gly Tyr Gly Glu Val Thr Arg Arg Gly Arg Arg Gln His Val
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163                 168                 173                 178

agg ttc act gaa tat gta aaa gat ggg ctg aaa cac acg tgt gtg aaa      871
Arg Phe Thr Glu Tyr Val Lys Asp Gly Leu Lys His Thr Cys Val Lys
179                 184                 189                 194

ttc tac att gag ggc tct gag cca ggg aag caa gga acg gtg tat gcg      919
Phe Tyr Ile Glu Gly Ser Glu Pro Gly Lys Gln Gly Thr Val Tyr Ala
195                 200                 205                 210

caa gtg aaa gag aac cca gga agt ggt gaa tat gat ttt cga tat ata      967
Gln Val Lys Glu Asn Pro Gly Ser Gly Glu Tyr Asp Phe Arg Tyr Ile
211                 216                 221                 226

ttt gta gaa att gaa tct tat cct aga aga act att atc att gaa gat     1015
Phe Val Glu Ile Glu Ser Tyr Pro Arg Arg Thr Ile Ile Ile Glu Asp
227                 232                 237                 242

aat cga tcc caa gat gat taa aa taatcaagca agcaggtttc tgatggatgt     1068
Asn Arg Ser Gln Asp Asp  *
243                 248

tgaatggcgt ggactcgcta ctccgttctt cacagctgcc ttccagaatg tgttcaaaag   1128

aaagacaaga aggagtgtat ggcttataaa gtgaatctaa tacagtattt gttgcattta   1188

aacaaactag acattttctt acggaaaaat tatgaaatac agcatatttt atgttctccc   1248

attgactcaa tcatgacaat atttctgctt taacaccatc tttcgtgatt agaaatgttt   1308

gttattggaa atgttacacc atgtaaataa aggaaataga ttttagtatt gtattcattt   1368

tatattatag aactgcataa tgtctgcaga ataaaattaa aactaacaaa tatgtcatta   1428

gcagctgccc tccgcatact ttggaatctg acttgagata agcatgtgaa aatggttgag   1488

ggccataggg aaccagatgg taaatacatt cttcaaaatt gaaaaaa                  1535


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ttgaacaagc gtcacttgac aagcctatat aatcgggaga acagatccca ttccaatcgt    180
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tgccaagtat gatgtc    atg ggc atg ggt cgc atg gaa atg gag ctt gat      229
                     Met Gly Met Gly Arg Met Glu Met Glu Leu Asp
                       1               5

tat gct gaa gat gct acc gaa cgg cgc cgt gtc cta gaa gta gaa aaa       277
Tyr Ala Glu Asp Ala Thr Glu Arg Arg Arg Val Leu Glu Val Glu Lys
 12                 17                  22                  27

gaa gac aca gaa gag ctg aga caa aag tac aag gat tat gtt gac aaa       325
Glu Asp Thr Glu Glu Leu Arg Gln Lys Tyr Lys Asp Tyr Val Asp Lys
 28                 33                  38                  43

gag aag gca att gcc aaa gcc ttg gaa gac ctc aga gcc aac ttt tat       373
Glu Lys Ala Ile Ala Lys Ala Leu Glu Asp Leu Arg Ala Asn Phe Tyr
 44                 49                  54                  59

tgt gaa ctg tgt gat aag caa tat cag aaa cat cag gaa ttt gat aac       421
Cys Glu Leu Cys Asp Lys Gln Tyr Gln Lys His Gln Glu Phe Asp Asn
 60                 65                  70                  75

cat atc aac tcc tat gat cat gca cac aag cag aga tta aaa gat ctg       469
His Ile Asn Ser Tyr Asp His Ala His Lys Gln Arg Leu Lys Asp Leu
 76                 81                  86                  91

aag cag aga gag ttt gct cga aat gtc tct tca aga tcc cgc aag gat       517
Lys Gln Arg Glu Phe Ala Arg Asn Val Ser Ser Arg Ser Arg Lys Asp
 92                 97                 102                 107

gag aaa aaa cag gaa aaa gcc ctt cgg cgg ctc cat gag ttg gca gag       565
Glu Lys Lys Gln Glu Lys Ala Leu Arg Arg Leu His Glu Leu Ala Glu
108                113                 118                 123

caa aga aaa caa gct gaa tgt gca cct gga agt ggt ccc atg ttc aaa       613
Gln Arg Lys Gln Ala Glu Cys Ala Pro Gly Ser Gly Pro Met Phe Lys
124                129                 134                 139

cca acc aca gtg gct gta gat gaa gaa ggt gga gaa gat gat aaa gat       661
Pro Thr Thr Val Ala Val Asp Glu Glu Gly Gly Glu Asp Asp Lys Asp
140                145                 150                 155

gaa tca gct aca aat agt ggc aca ggt gcc act gct tct tgt ggc ctg       709
Glu Ser Ala Thr Asn Ser Gly Thr Gly Ala Thr Ala Ser Cys Gly Leu
156                161                 166                 171

gga tct gaa ttc tcc aca gat aaa gga ggc cct ttc act gca gta caa       757
Gly Ser Glu Phe Ser Thr Asp Lys Gly Gly Pro Phe Thr Ala Val Gln
172                177                 182                 187

atc act aat acc act gga ctg gcc cag gct cct ggg tta gcc tcc caa       805
Ile Thr Asn Thr Thr Gly Leu Ala Gln Ala Pro Gly Leu Ala Ser Gln
188                193                 198                 203

ggc atc agc ttt ggc att aag aat aat ctg ggg acc cca ttg caa aaa       853
Gly Ile Ser Phe Gly Ile Lys Asn Asn Leu Gly Thr Pro Leu Gln Lys
204                209                 214                 219

ttg gga gtg tca ttt tct ttt gcc aaa aag gct cct gtc aaa ctc gaa       901
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Leu Gly Val Ser Phe Ser Phe Ala Lys Lys Ala Pro Val Lys Leu Glu
220                 225                 230                 235

tca ata gca tca gtt ttc aag gac cat gcg gag gaa ggg acc tct gaa      949
Ser Ile Ala Ser Val Phe Lys Asp His Ala Glu Glu Gly Thr Ser Glu
236                 241                 246                 251

gat gga aca aaa ccc gat gag aag agt tct gac caa gga ctg cag aag      997
Asp Gly Thr Lys Pro Asp Glu Lys Ser Ser Asp Gln Gly Leu Gln Lys
252                 257                 262                 267

gta gga gac tct gat ggg agc agt aat ctt gat ggt aaa aaa gag gat     1045
Val Gly Asp Ser Asp Gly Ser Ser Asn Leu Asp Gly Lys Lys Glu Asp
268                 273                 278                 283

gaa gac cct cag gat gga ggg tcc ctt gcc tca aca tta tcc aaa tta     1093
Glu Asp Pro Gln Asp Gly Gly Ser Leu Ala Ser Thr Leu Ser Lys Leu
284                 289                 294                 299

aaa agg atg aaa cga gaa gaa gga gct ggg gct aca gag cct gag tat     1141
Lys Arg Met Lys Arg Glu Glu Gly Ala Gly Ala Thr Glu Pro Glu Tyr
300                 305                 310                 315

tac cac tac atc ccc cca gca cac tgc aaa gta aaa cct aat ttt ccc     1189
Tyr His Tyr Ile Pro Pro Ala His Cys Lys Val Lys Pro Asn Phe Pro
316                 321                 326                 331

ttt cta ctt ttt atg aga gcc agt gaa caa atg gat ggt gat aat act     1237
Phe Leu Leu Phe Met Arg Ala Ser Glu Gln Met Asp Gly Asp Asn Thr
332                 337                 342                 347

aca cac cca aag aat gcc cca gag agt aaa aaa ggc agt tct ccc aag     1285
Thr His Pro Lys Asn Ala Pro Glu Ser Lys Lys Gly Ser Ser Pro Lys
348                 353                 358                 363

cct aaa agc tgc atc aag gcg gca gca agc caa gga gca gaa aag aca     1333
Pro Lys Ser Cys Ile Lys Ala Ala Ala Ser Gln Gly Ala Glu Lys Thr
364                 369                 374                 379

gtt agt gaa gtc tct gag cag ccg aag gaa acc agc atg acc gag ccc     1381
Val Ser Glu Val Ser Glu Gln Pro Lys Glu Thr Ser Met Thr Glu Pro
380                 385                 390                 395

tca gaa cca gga agc aaa gct gag gca aag aag gcc tta gga ggg gat     1429
Ser Glu Pro Gly Ser Lys Ala Glu Ala Lys Lys Ala Leu Gly Gly Asp
396                 401                 406                 411

gta agt gat cag agt tta gaa agt cat agt cag aag gtt tca gag acc     1477
Val Ser Asp Gln Ser Leu Glu Ser His Ser Gln Lys Val Ser Glu Thr
412                 417                 422                 427

caa atg tgt gag tcc aac tct tct aaa gaa acc tct ctg gcc acc cca     1525
Gln Met Cys Glu Ser Asn Ser Ser Lys Glu Thr Ser Leu Ala Thr Pro
428                 433                 438                 443

gca ggg aaa gaa agc caa gaa gga ccc aaa cat cct act ggt ccc ttc     1573
Ala Gly Lys Glu Ser Gln Glu Gly Pro Lys His Pro Thr Gly Pro Phe
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444                 449                 454                 459

ttc cca gtt ttg agc aaa gat gaa agc act gcc ctc cag tgg cca tca      1621
Phe Pro Val Leu Ser Lys Asp Glu Ser Thr Ala Leu Gln Trp Pro Ser
460                 465                 470                 475

gaa cta tta att ttc acc aag gca gaa ccc tcc att tca tac agt tgt      1669
Glu Leu Leu Ile Phe Thr Lys Ala Glu Pro Ser Ile Ser Tyr Ser Cys
476                 481                 486                 491

aac cct tta tat ttt gac ttt aaa ctt tca agg aac aaa gat gcc aga      1717
Asn Pro Leu Tyr Phe Asp Phe Lys Leu Ser Arg Asn Lys Asp Ala Arg
492                 497                 502                 507

act aaa gga aca gaa aaa cca aag gat ata gga agc tcc tca aag gac      1765
Thr Lys Gly Thr Glu Lys Pro Lys Asp Ile Gly Ser Ser Ser Lys Asp
508                 513                 518                 523

cat ctc caa ggc cta gat cct ggt gag cca aat aaa agc aag gaa gtg      1813
His Leu Gln Gly Leu Asp Pro Gly Glu Pro Asn Lys Ser Lys Glu Val
524                 529                 534                 539

ggc gga gag aaa ata gta cgt tcc tca gga ggc aga atg gac gca cct      1861
Gly Gly Glu Lys Ile Val Arg Ser Ser Gly Gly Arg Met Asp Ala Pro
540                 545                 550                 555

gct tca ggg tct gcc tgt agc ggc ctg aac aag cag gag cct ggg ggt      1909
Ala Ser Gly Ser Ala Cys Ser Gly Leu Asn Lys Gln Glu Pro Gly Gly
556                 561                 566                 571

agc cat ggg tct gag aca gaa gac aca ggg aga agc ctt ccc agc aag      1957
Ser His Gly Ser Glu Thr Glu Asp Thr Gly Arg Ser Leu Pro Ser Lys
572                 577                 582                 587

aaa gaa cga tct ggg aag tcc cac cgg cac aaa aag aaa aag aag cac      2005
Lys Glu Arg Ser Gly Lys Ser His Arg His Lys Lys Lys Lys Lys His
588                 593                 598                 603

aaa aaa tcc agc aaa cac aaa cgt aaa cac aag gct gac aca gaa gag      2053
Lys Lys Ser Ser Lys His Lys Arg Lys His Lys Ala Asp Thr Glu Glu
604                 609                 614                 619

aaa agc tct aag gca gag tca ggg gag aaa tct aag aag cgc aag aaa      2101
Lys Ser Ser Lys Ala Glu Ser Gly Glu Lys Ser Lys Lys Arg Lys Lys
620                 625                 630                 635

cga aaa cga aag aag aat aag tca tca gcc cca gca gat tct gaa cga      2149
Arg Lys Arg Lys Lys Asn Lys Ser Ser Ala Pro Ala Asp Ser Glu Arg
636                 641                 646                 651

gga ccc aaa cca gaa ccc cct ggg agt ggc agt ccc gca cca cca aga      2197
Gly Pro Lys Pro Glu Pro Pro Gly Ser Gly Ser Pro Ala Pro Pro Arg
652                 657                 662                 667

aga agg cgg aga gct caa gat gac tcc cag cgg aga tcc ctc cca gct      2245
Arg Arg Arg Arg Ala Gln Asp Asp Ser Gln Arg Arg Ser Leu Pro Ala
668                 673                 678                 683
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gaa gag ggg agc agt ggc aaa aag gat gaa ggt ggg ggt ggt agc agc      2293
Glu Glu Gly Ser Ser Gly Lys Lys Asp Glu Gly Gly Gly Gly Ser Ser
684                 689                 694                 699

tcc caa gac cat ggt ggg agg aaa cac aaa ggt gaa ctt cca cct tca      2341
Ser Gln Asp His Gly Gly Arg Lys His Lys Gly Glu Leu Pro Pro Ser
700                 705                 710                 715

tcc tgc cag cga aga gca ggc acc aaa cgg agc agc cgg tct agc cat      2389
Ser Cys Gln Arg Arg Ala Gly Thr Lys Arg Ser Ser Arg Ser Ser His
716                 721                 726                 731

cgg agc caa ccc agt agt gga gat gag gat agt gat gat gct tcc tca      2437
Arg Ser Gln Pro Ser Ser Gly Asp Glu Asp Ser Asp Asp Ala Ser Ser
732                 737                 742                 747

cac cgg ctg cac cag aag tct cca tcc cag tac agt gag gaa gaa gaa      2485
His Arg Leu His Gln Lys Ser Pro Ser Gln Tyr Ser Glu Glu Glu Glu
748                 753                 758                 763

gag gaa gat tca ggc agt gag cat tcc cgc agc cgc tca agg tct ggc      2533
Glu Glu Asp Ser Gly Ser Glu His Ser Arg Ser Arg Ser Arg Ser Gly
764                 769                 774                 779

cgg cgc cat tcc tcg cat cgt tcc tcc cgg cgt tct tac tca agt agc      2581
Arg Arg His Ser Ser His Arg Ser Ser Arg Arg Ser Tyr Ser Ser Ser
780                 785                 790                 795

tca gat gcc tct tca gac cag agc tgc tat agt aga cag cgc agt tac      2629
Ser Asp Ala Ser Ser Asp Gln Ser Cys Tyr Ser Arg Gln Arg Ser Tyr
796                 801                 806                 811

tct gat gac agc tac agt gac tac agt gac aga tca cga agg cac tcc      2677
Ser Asp Asp Ser Tyr Ser Asp Tyr Ser Asp Arg Ser Arg Arg His Ser
812                 817                 822                 827

aag cgc tcc cat gac tca gat gac tca gac tat gcc agc tcc aaa cac      2725
Lys Arg Ser His Asp Ser Asp Asp Ser Asp Tyr Ala Ser Ser Lys His
828                 833                 838                 843

cga tca aaa cgg cac aaa tat tca tct tct gat gat gac tat agc ctc      2773
Arg Ser Lys Arg His Lys Tyr Ser Ser Ser Asp Asp Asp Tyr Ser Leu
844                 849                 854                 859

agt tgc agc cag tcc cga agc cga tct cgg agt cat acc aga gag cgc      2821
Ser Cys Ser Gln Ser Arg Ser Arg Ser Arg Ser His Thr Arg Glu Arg
860                 865                 870                 875

tca aga tcc cgg ggc cgc agc cgc agc agc agt tgt agt cgt agt cga      2869
Ser Arg Ser Arg Gly Arg Ser Arg Ser Ser Ser Cys Ser Arg Ser Arg
876                 881                 886                 891

agc aag cgg aga agc cgt agc acc aca gcc cac agc tgg caa cgg agc      2917
Ser Lys Arg Arg Ser Arg Ser Thr Thr Ala His Ser Trp Gln Arg Ser
892                 897                 902                 907
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cgg agc tat agc cgg gac cgc agc cgc agc acc agg agc cct tcc cag      2965
Arg Ser Tyr Ser Arg Asp Arg Ser Arg Ser Thr Arg Ser Pro Ser Gln
908                 913                 918                 923

aga tca ggc tcc agg aag aga tca tgg ggt cac gag agc cct gag gag      3013
Arg Ser Gly Ser Arg Lys Arg Ser Trp Gly His Glu Ser Pro Glu Glu
924                 929                 934                 939

agg cat tct ggg cgt cgg gac ttc att cgt tct aag atc tac cgc tcc      3061
Arg His Ser Gly Arg Arg Asp Phe Ile Arg Ser Lys Ile Tyr Arg Ser
940                 945                 950                 955

cag tcc ccc cac tat ttc cga tca ggc cgg gga gaa ggt cct ggg aag      3109
Gln Ser Pro His Tyr Phe Arg Ser Gly Arg Gly Glu Gly Pro Gly Lys
956                 961                 966                 971

aaa gat gat ggc aga gga gat gac agt aaa gca aca ggt cca cct tcc      3157
Lys Asp Asp Gly Arg Gly Asp Asp Ser Lys Ala Thr Gly Pro Pro Ser
972                 977                 982                 987

cag aac agc aac att ggc aca gga aga ggg tca gaa ggt gac tgc agt      3205
Gln Asn Ser Asn Ile Gly Thr Gly Arg Gly Ser Glu Gly Asp Cys Ser
988                 993                 998                 1003

cct gaa gac aag aac tct gtc act gcc aaa ctg cta ctg gag aag atc      3253
Pro Glu Asp Lys Asn Ser Val Thr Ala Lys Leu Leu Leu Glu Lys Ile
1004                1009                1014                1019

cag tca agg aaa gtg gag agg aaa cct agt gtg agt gag gag gtg cag      3301
Gln Ser Arg Lys Val Glu Arg Lys Pro Ser Val Ser Glu Glu Val Gln
1020                1025                1030                1035

gcc acc cct aat aaa gct ggg ccc aag ctc aag gac ccc cca caa ggt      3349
Ala Thr Pro Asn Lys Ala Gly Pro Lys Leu Lys Asp Pro Pro Gln Gly
1036                1041                1046                1051

tac ttt ggg ccc aag ctc ccc cca tct ctt ggc aat aag cct gtc ctt      3397
Tyr Phe Gly Pro Lys Leu Pro Pro Ser Leu Gly Asn Lys Pro Val Leu
1052                1057                1062                1067

cca ctg ata ggg aag ctc cca gct acg cga aag ccc aat aag aag tgt      3445
Pro Leu Ile Gly Lys Leu Pro Ala Thr Arg Lys Pro Asn Lys Lys Cys
1068                1073                1078                1083

gaa gag tct ggc ttg gaa agg ggg gaa gag caa gaa cag tca gag aca      3493
Glu Glu Ser Gly Leu Glu Arg Gly Glu Glu Gln Glu Gln Ser Glu Thr
1084                1089                1094                1099

gaa gag ggg ccc cca ggg agt agt gat gcc cta ttt ggg cat cag ttc      3541
Glu Glu Gly Pro Pro Gly Ser Ser Asp Ala Leu Phe Gly His Gln Phe
1100                1105                1110                1115

cct tca gag gaa aca act ggc ccc tta tta gac cca ccc cca gaa gag      3589
Pro Ser Glu Glu Thr Thr Gly Pro Leu Leu Asp Pro Pro Pro Glu Glu
1116                1121                1126                1131

tca aag tct gga gaa gct act gct gat cac cct gtg gct cca cta ggc      3637
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Ser Lys Ser Gly Glu Ala Thr Ala Asp His Pro Val Ala Pro Leu Gly
1132                1137                1142                1147

acc cca gca cat tct gac tgc tac cct ggg gac cca acc atc tcc cat      3685
Thr Pro Ala His Ser Asp Cys Tyr Pro Gly Asp Pro Thr Ile Ser His
1148                1153                1158                1163

aac tac ctc ccc gac ccc agt gat ggg gac acc ctg gag tcc ctg gat      3733
Asn Tyr Leu Pro Asp Pro Ser Asp Gly Asp Thr Leu Glu Ser Leu Asp
1164                1169                1174                1179

agc agc agt cag cca ggc cct gtg gag tcc agc ttg ctg cct ata gca      3781
Ser Ser Ser Gln Pro Gly Pro Val Glu Ser Ser Leu Leu Pro Ile Ala
1180                1185                1190                1195

cca gac ctt gag cat ttc ccc agt tat gca cct ccc agt ggg gat cct      3829
Pro Asp Leu Glu His Phe Pro Ser Tyr Ala Pro Pro Ser Gly Asp Pro
1196                1201                1206                1211

agt att gag tca aca gat ggg gct gag gat gct tca ctg gcc ccc ctg      3877
Ser Ile Glu Ser Thr Asp Gly Ala Glu Asp Ala Ser Leu Ala Pro Leu
1212                1217                1222                1227

gaa agc cag ccc atc acc ttc acc cct gag gag atg gag aag tac agc      3925
Glu Ser Gln Pro Ile Thr Phe Thr Pro Glu Glu Met Glu Lys Tyr Ser
1228                1233                1238                1243

aag ctc cag cag gct gct cag caa cac atc cag cag cag ctt ctg gcc      3973
Lys Leu Gln Gln Ala Ala Gln Gln His Ile Gln Gln Gln Leu Leu Ala
1244                1249                1254                1259

aag caa gta aag gcc ttt cca gcc tca gct gcc ctg gcc cca gcc aca      4021
Lys Gln Val Lys Ala Phe Pro Ala Ser Ala Ala Leu Ala Pro Ala Thr
1260                1265                1270                1275

cca gcc ctg caa ccc atc cac att cag cag cca gct aca gcc tct gcc      4069
Pro Ala Leu Gln Pro Ile His Ile Gln Gln Pro Ala Thr Ala Ser Ala
1276                1281                1286                1291

acc tcc atc aca act gtt cag cat gcc atc cta caa cat cat gct gcc      4117
Thr Ser Ile Thr Thr Val Gln His Ala Ile Leu Gln His His Ala Ala
1292                1297                1302                1307

gca gct gct gcc gcc atc ggc att cac cct cac ccc cat ccc caa cca      4165
Ala Ala Ala Ala Ala Ile Gly Ile His Pro His Pro His Pro Gln Pro
1308                1313                1318                1323

ctt gcc cag gtg cat cat att ccc cag ccc cat ctg acc ccc att tct      4213
Leu Ala Gln Val His His Ile Pro Gln Pro His Leu Thr Pro Ile Ser
1324                1329                1334                1339

ttg tcc cac ctc act cac tca atc atc cct ggc cac cct gcc acc ttt      4261
Leu Ser His Leu Thr His Ser Ile Ile Pro Gly His Pro Ala Thr Phe
1340                1345                1350                1355

ctc gct agc cat ccc atc cac atc att ccc gcc tca gcc atc cat cct      4309
Leu Ala Ser His Pro Ile His Ile Ile Pro Ala Ser Ala Ile His Pro
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1356                1361                1366                1371

ggg ccc ttc acc ttt cac cct gtc cca cat gct gcc ctc tac ccc acc      4357
Gly Pro Phe Thr Phe His Pro Val Pro His Ala Ala Leu Tyr Pro Thr
1372                1377                1382                1387

cta ctt gct cca cgg cct gct gca gca gct gcc act gca ctt cac ctt      4405
Leu Leu Ala Pro Arg Pro Ala Ala Ala Ala Ala Thr Ala Leu His Leu
1388                1393                1398                1403

cac cca cta ctt cac ccc atc ttc tca ggt cag gac ctg caa cat ccc      4453
His Pro Leu Leu His Pro Ile Phe Ser Gly Gln Asp Leu Gln His Pro
1404                1409                1414                1419

ccc agc cat ggc acg tga gttggg ggatgggatc ctaggtaggg ccaggggagg      4507
Pro Ser His Gly Thr  *
1420                1425

agacccataa atgttccctt gggggtgttg agccattaat accagcaagt agaagctggg    4567

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gaagtttgct ttcagtttac tatcagggat ttctttttcc tgtcctcctc tcaatttgtc    4687

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                        Met Asp Asn Pro Ile Gly Asn Trp Asp Gly
                         1               5

aga ttt gat gga gtg cag ctt tgt agt ttt gcg tgt gtt gaa agt aca      158
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Arg Phe Asp Gly Val Gln Leu Cys Ser Phe Ala Cys Val Glu Ser Thr
 11                  16                  21                  26

att cta ttg cac atc aat gat atc atc cca gag agt gtg acg cag gaa      206
Ile Leu Leu His Ile Asn Asp Ile Ile Pro Glu Ser Val Thr Gln Glu
 27                  32                  37                  42

agg agg cct ccc aaa ctt gcc ttt atg tca aga ggt gtt ggg gac aaa      254
Arg Arg Pro Pro Lys Leu Ala Phe Met Ser Arg Gly Val Gly Asp Lys
 43                  48                  53                  58

ggt tca tcc agt cat aat aaa cca aag gct aca gga tct acc tca gac      302
Gly Ser Ser Ser His Asn Lys Pro Lys Ala Thr Gly Ser Thr Ser Asp
 59                  64                  69                  74

cct gga aat aga aac aga tct gaa tta ttt tat acc tta aat ggg tct      350
Pro Gly Asn Arg Asn Arg Ser Glu Leu Phe Tyr Thr Leu Asn Gly Ser
 75                  80                  85                  90

tct gtt gac tca caa cca caa tcc aaa tca aaa aat aca tgg tac att      398
Ser Val Asp Ser Gln Pro Gln Ser Lys Ser Lys Asn Thr Trp Tyr Ile
 91                  96                 101                 106

gat gaa gtt gca gaa gac cct gca aaa tct ctt aca gag ata tct aca      446
Asp Glu Val Ala Glu Asp Pro Ala Lys Ser Leu Thr Glu Ile Ser Thr
107                 112                 117                 122

gac ttt gac cgt tct tca cca cca ctc cag cct cct cct gtg aac tca      494
Asp Phe Asp Arg Ser Ser Pro Pro Leu Gln Pro Pro Pro Val Asn Ser
123                 128                 133                 138

ctg acc acc gag aac aga ttc cac tct tta cca ttc agt ctc acc aag      542
Leu Thr Thr Glu Asn Arg Phe His Ser Leu Pro Phe Ser Leu Thr Lys
139                 144                 149                 154

atg ccc aat acc aat gga agt att ggc cac agt cca ctt tct ctg tca      590
Met Pro Asn Thr Asn Gly Ser Ile Gly His Ser Pro Leu Ser Leu Ser
155                 160                 165                 170

gcc cag tct gta atg gaa gag cta aac act gca ccc gtc caa gag agt      638
Ala Gln Ser Val Met Glu Glu Leu Asn Thr Ala Pro Val Gln Glu Ser
171                 176                 181                 186

cca ccc ttg gcc atg cct cct ggg aac tca cat ggt cta gaa gtg ggc      686
Pro Pro Leu Ala Met Pro Pro Gly Asn Ser His Gly Leu Glu Val Gly
187                 192                 197                 202

tca ttg gct gaa gtt aag gag aac cct cct ttc tat ggg gta atc cgt      734
Ser Leu Ala Glu Val Lys Glu Asn Pro Pro Phe Tyr Gly Val Ile Arg
203                 208                 213                 218

tgg atc ggt cag cca cca gga ctg aat gaa gtg ctc gct gga ctg gaa      782
Trp Ile Gly Gln Pro Pro Gly Leu Asn Glu Val Leu Ala Gly Leu Glu
219                 224                 229                 234

ctg gaa gat gag tgt gca ggc tgt acg gat gga acc ttc aga ggc act      830
Leu Glu Asp Glu Cys Ala Gly Cys Thr Asp Gly Thr Phe Arg Gly Thr
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235                     240                     245                     250

cgg tat ttc acc tgt gcc ctg aag aag gcg ctg ttt gtg aaa ctg aag          878
Arg Tyr Phe Thr Cys Ala Leu Lys Lys Ala Leu Phe Val Lys Leu Lys
251                 256                 261                 266

agc tgc agg cct gac tct agg ttt gca tca ttg cag ccg gtt tcc aat          926
Ser Cys Arg Pro Asp Ser Arg Phe Ala Ser Leu Gln Pro Val Ser Asn
267                 272                 277                 282

cag att gag cgc tgt aac tct tta gca ttt gga ggc tac tta agt gaa          974
Gln Ile Glu Arg Cys Asn Ser Leu Ala Phe Gly Gly Tyr Leu Ser Glu
283                 288                 293                 298

gta gta gaa gaa aat act cca cca aaa atg gaa aaa gaa ggc ttg gag         1022
Val Val Glu Glu Asn Thr Pro Pro Lys Met Glu Lys Glu Gly Leu Glu
299                 304                 309                 314

ata atg att ggg aag aag aaa ggc atc cag ggt cat tac aat tct tgt         1070
Ile Met Ile Gly Lys Lys Lys Gly Ile Gln Gly His Tyr Asn Ser Cys
315                 320                 325                 330

tac tta gac tca acc tta ttc tgc tta ttt gct ttt agt tct gtt ctg         1118
Tyr Leu Asp Ser Thr Leu Phe Cys Leu Phe Ala Phe Ser Ser Val Leu
331                 336                 341                 346

gac act gtg tta ctt aga ccc aaa gaa aag aac gat gta gaa tat tat         1166
Asp Thr Val Leu Leu Arg Pro Lys Glu Lys Asn Asp Val Glu Tyr Tyr
347                 352                 357                 362

agt gaa acc caa gag cta ctg agg aca gaa att gtt aat cct ctg aga         1214
Ser Glu Thr Gln Glu Leu Leu Arg Thr Glu Ile Val Asn Pro Leu Arg
363                 368                 373                 378

ata tat gga tat gtg tgt gcc aca aaa att atg aaa ctg agg aaa ata         1262
Ile Tyr Gly Tyr Val Cys Ala Thr Lys Ile Met Lys Leu Arg Lys Ile
379                 384                 389                 394

ctt gaa aag gtg gag gct gca tca gga ttt acc tct gaa gaa aaa gat         1310
Leu Glu Lys Val Glu Ala Ala Ser Gly Phe Thr Ser Glu Glu Lys Asp
395                 400                 405                 410

cct gag gaa ttc ttg aat att ctg ttt cat cat att tta agg gta gaa         1358
Pro Glu Glu Phe Leu Asn Ile Leu Phe His His Ile Leu Arg Val Glu
411                 416                 421                 426

cct ttg cta aaa ata aga tca gca ggt caa aag gta caa gat tgt tac         1406
Pro Leu Leu Lys Ile Arg Ser Ala Gly Gln Lys Val Gln Asp Cys Tyr
427                 432                 437                 442

ttc tat caa att ttt atg gaa aaa aat gag aaa gtt ggc gtt ccc aca         1454
Phe Tyr Gln Ile Phe Met Glu Lys Asn Glu Lys Val Gly Val Pro Thr
443                 448                 453                 458

att cag cag ttg tta gaa tgg tct ttt atc aac agt aac ctg aaa ttt         1502
Ile Gln Gln Leu Leu Glu Trp Ser Phe Ile Asn Ser Asn Leu Lys Phe
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Ala Glu Ala Pro Ser Cys Leu Ile Ile Gln Met Pro Arg Phe Gly Lys
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gac ttt aaa cta ttt aaa aaa att ttt cct tct ctg gaa tta aat ata      1598
Asp Phe Lys Leu Phe Lys Lys Ile Phe Pro Ser Leu Glu Leu Asn Ile
491                 496                 501                 506

aca gat tta ctt gaa gac act ccc aga cag tgc cgg ata tgt gga ggg      1646
Thr Asp Leu Leu Glu Asp Thr Pro Arg Gln Cys Arg Ile Cys Gly Gly
507                 512                 517                 522

ctt gca atg tat gag tgt aga gaa tgc tac gac gat ccg gac atc tca      1694
Leu Ala Met Tyr Glu Cys Arg Glu Cys Tyr Asp Asp Pro Asp Ile Ser
523                 528                 533                 538

gct gga aaa atc aag cag ttt tgt aaa acc tgc aac act caa gtc cac      1742
Ala Gly Lys Ile Lys Gln Phe Cys Lys Thr Cys Asn Thr Gln Val His
539                 544                 549                 554

ctt cat ccg aag agg ctg aat cat aaa tat aac cca gtg tca ctt ccc      1790
Leu His Pro Lys Arg Leu Asn His Lys Tyr Asn Pro Val Ser Leu Pro
555                 560                 565                 570

aaa gac tta ccc gac tgg gac tgg aga cac ggc tgc atc cct tgc cag      1838
Lys Asp Leu Pro Asp Trp Asp Trp Arg His Gly Cys Ile Pro Cys Gln
571                 576                 581                 586

aat atg gag tta ttt gct gtt ctc tgc ata gaa aca agc cac tat gtt      1886
Asn Met Glu Leu Phe Ala Val Leu Cys Ile Glu Thr Ser His Tyr Val
587                 592                 597                 602

gct ttt gtg aag tat ggg aag gac gat tct gcc tgg ctc ttc ttt gac      1934
Ala Phe Val Lys Tyr Gly Lys Asp Asp Ser Ala Trp Leu Phe Phe Asp
603                 608                 613                 618

agc atg gcc gat cgg gat ggt ggt cag aat ggc ttc aac att cct caa      1982
Ser Met Ala Asp Arg Asp Gly Gly Gln Asn Gly Phe Asn Ile Pro Gln
619                 624                 629                 634

gtc acc cca tgc cca gaa gta gga gag tac ttg aag atg tct ctg gaa      2030
Val Thr Pro Cys Pro Glu Val Gly Glu Tyr Leu Lys Met Ser Leu Glu
635                 640                 645                 650

gac ctg cat tcc ttg gac tcc agg aga atc caa ggc tgt gca cga aga      2078
Asp Leu His Ser Leu Asp Ser Arg Arg Ile Gln Gly Cys Ala Arg Arg
651                 656                 661                 666

ctg ctt tgt gat gca tat atg tgc atg tac cag agt cca aca atg agt      2126
Leu Leu Cys Asp Ala Tyr Met Cys Met Tyr Gln Ser Pro Thr Met Ser
667                 672                 677                 682

ttg tac aaa taa ctg gggtcatcgg gaaaggcaaa gaaactgaag gcagagtcct      2181
Leu Tyr Lys  *
683
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tcacccagag accagtgctc ccaacggcag agcagcgggg gagataaaga actggtgaca    180

cgtggctgta cattcagcac agctgtggtg tccccaagtg cc   atg acc cag gag     234
                                                 Met Thr Gln Glu
                                                   1

cca ttc aga gag gag ctg gcc tat gac cgg atg ccc acg ctg gag cgg      282
Pro Phe Arg Glu Glu Leu Ala Tyr Asp Arg Met Pro Thr Leu Glu Arg
  5                  10                  15                  20

ggc cgg caa gac ccc gcc agc tat gcc cca gac gcg aag ccg agc gac      330
Gly Arg Gln Asp Pro Ala Ser Tyr Ala Pro Asp Ala Lys Pro Ser Asp
 21                  26                  31                  36

ctg cag ctg tcg aag aga ctg ccc ccc tgc ttc agc cac aag acg tgg      378
Leu Gln Leu Ser Lys Arg Leu Pro Pro Cys Phe Ser His Lys Thr Trp
 37                  42                  47                  52

gtc ttc tct gcg ctg atg gga acc tgc ctc ctg gag acc tcg ggg ttt      426
Val Phe Ser Ala Leu Met Gly Thr Cys Leu Leu Glu Thr Ser Gly Phe
 53                  58                  63                  68

tct ctg aac ttg gaa acg tgt ccc ggt gtg aaa ggg taa tt               467
Ser Leu Asn Leu Glu Thr Cys Pro Gly Val Lys Gly  *
 69                  74                  79
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atagaatgga gatggcaaag atctctttgg gcatatatgg gcctggcgaa gtaatggaat     120

aatttctaat tttcggagaa ggcaagtgcc ctcatgccgg g    atg gca gaa gat      173
                                                 Met Ala Glu Asp
                                                  1

gag cct gat gct aag agc ccc aag act ggg gga agg gcc ccc cca ggt      221
Glu Pro Asp Ala Lys Ser Pro Lys Thr Gly Gly Arg Ala Pro Pro Gly
  5                 10                  15                  20

ggt gct gag gct ggg gaa cct acc acc ctt ctt cag agg ctc cga ggt      269
Gly Ala Glu Ala Gly Glu Pro Thr Thr Leu Leu Gln Arg Leu Arg Gly
 21                 26                  31                  36

acc att tcc aag gcc gtg cag aac aaa gta gag ggg atc ctg caa gat      317
Thr Ile Ser Lys Ala Val Gln Asn Lys Val Glu Gly Ile Leu Gln Asp
 37                 42                  47                  52

gta cag aaa ttt tct gac aat gac aag ctg tat ctc tac ctt cag ctc      365
Val Gln Lys Phe Ser Asp Asn Asp Lys Leu Tyr Leu Tyr Leu Gln Leu
 53                 58                  63                  68

ccc tca gga ccc acc act gga gac aaa agc tca gag cca agt aca ctg      413
Pro Ser Gly Pro Thr Thr Gly Asp Lys Ser Ser Glu Pro Ser Thr Leu
 69                 74                  79                  84

agc aat gag gag tac atg tat gcc tat agg tgg atc cgc aac cac ctg      461
Ser Asn Glu Glu Tyr Met Tyr Ala Tyr Arg Trp Ile Arg Asn His Leu
 85                 90                  95                  100

gaa gag cac act gac acc tgt ctg cca aag caa agt gtt tat gat gcc      509
Glu Glu His Thr Asp Thr Cys Leu Pro Lys Gln Ser Val Tyr Asp Ala
101                 106                 111                 116

tat cgg aag tac tgt gag agt ctt gcc tgt tgc cgc cca ctc agc aca      557
Tyr Arg Lys Tyr Cys Glu Ser Leu Ala Cys Cys Arg Pro Leu Ser Thr
117                 122                 127                 132

gcc aac ttt ggc aag atc atc aga gag atc ttc cct gac atc aaa gct      605
Ala Asn Phe Gly Lys Ile Ile Arg Glu Ile Phe Pro Asp Ile Lys Ala
133                 138                 143                 148

cga agg ctt ggt ggc cgg ggc cag tcc aaa tat tgc tac agt ggc ata      653
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Arg Arg Leu Gly Gly Arg Gly Gln Ser Lys Tyr Cys Tyr Ser Gly Ile
149                 154                 159                 164

agg agg aag acc ttg gtg tct atg cca ccc ctg cct gga ctt gac cta       701
Arg Arg Lys Thr Leu Val Ser Met Pro Pro Leu Pro Gly Leu Asp Leu
165                 170                 175                 180

aag ggt tct gag agt cca gaa atg ggc cca gaa gta acc cca gca cct       749
Lys Gly Ser Glu Ser Pro Glu Met Gly Pro Glu Val Thr Pro Ala Pro
181                 186                 191                 196

cga gat gaa ctg gtg gag gca gcg tgt gcc ctg acc tgt gac tgg gca       797
Arg Asp Glu Leu Val Glu Ala Ala Cys Ala Leu Thr Cys Asp Trp Ala
197                 202                 207                 212

gag cgg atc ctg aaa cgg tcc ttc agt tcc atc gtt gag gtc gcc cgc       845
Glu Arg Ile Leu Lys Arg Ser Phe Ser Ser Ile Val Glu Val Ala Arg
213                 218                 223                 228

ttc ctg cta cag cag cat ctc atc tct gcc cga tct gca cat gcc cat       893
Phe Leu Leu Gln Gln His Leu Ile Ser Ala Arg Ser Ala His Ala His
229                 234                 239                 244

gtg ctt aag gcc atg ggg ctt gct gaa gag gac gaa cat gca cct cgg       941
Val Leu Lys Ala Met Gly Leu Ala Glu Glu Asp Glu His Ala Pro Arg
245                 250                 255                 260

gaa cgg tca tct aaa cca aag aat ggt tta gag aac cca gag ggt gga       989
Glu Arg Ser Ser Lys Pro Lys Asn Gly Leu Glu Asn Pro Glu Gly Gly
261                 266                 271                 276

gcc cac aag aag cca gag aga ctg gcc cag cct cct aag gat ctg gaa      1037
Ala His Lys Lys Pro Glu Arg Leu Ala Gln Pro Pro Lys Asp Leu Glu
277                 282                 287                 292

gcc cga act ggg gcc ggt cct ctc gca cgt gga gag cgg aag aag agt      1085
Ala Arg Thr Gly Ala Gly Pro Leu Ala Arg Gly Glu Arg Lys Lys Ser
293                 298                 303                 308

gta gtt gag agc tcg gcc cca gga gcc aat aac ctg cag gtt aat gcc      1133
Val Val Glu Ser Ser Ala Pro Gly Ala Asn Asn Leu Gln Val Asn Ala
309                 314                 319                 324

cta gtg gct cgg ctg cct ctg ctc ctt ccc cgg gcc cct cgc tca cta      1181
Leu Val Ala Arg Leu Pro Leu Leu Leu Pro Arg Ala Pro Arg Ser Leu
325                 330                 335                 340

att ccg cca atc cca gtc tct cca cct att ctg gcc ccc agg ctt tct      1229
Ile Pro Pro Ile Pro Val Ser Pro Pro Ile Leu Ala Pro Arg Leu Ser
341                 346                 351                 356

tca ggt gcc ctg aaa gtg gct aca ctg cct ctg tct agt agg gcc ggg      1277
Ser Gly Ala Leu Lys Val Ala Thr Leu Pro Leu Ser Ser Arg Ala Gly
357                 362                 367                 372

gca ccc cca gca gct gtg ccc atc att aac atg atc tta cca act gtt      1325
Ala Pro Pro Ala Ala Val Pro Ile Ile Asn Met Ile Leu Pro Thr Val
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373                 378                 383                 388

cct gct ttg cct gga cct gga cct ggg cct ggg cga gct cca cct ggg      1373
Pro Ala Leu Pro Gly Pro Gly Pro Gly Pro Gly Arg Ala Pro Pro Gly
389                 394                 399                 404

gga ctc act cag ccc cgg ggc aca gag aac aga gag gta ggc ata ggt      1421
Gly Leu Thr Gln Pro Arg Gly Thr Glu Asn Arg Glu Val Gly Ile Gly
405                 410                 415                 420

ggt gac caa gga cca cat gac aag ggt gtc aag agg aca gct gaa gta      1469
Gly Asp Gln Gly Pro His Asp Lys Gly Val Lys Arg Thr Ala Glu Val
421                 426                 431                 436

cct gtg agt gag gcc agt ggg cag gct cca cca gct aaa gca gca aag      1517
Pro Val Ser Glu Ala Ser Gly Gln Ala Pro Pro Ala Lys Ala Ala Lys
437                 442                 447                 452

cag gat ata gag gat aca gca agt gat gcc aaa agg aaa cgg ggg cgc      1565
Gln Asp Ile Glu Asp Thr Ala Ser Asp Ala Lys Arg Lys Arg Gly Arg
453                 458                 463                 468

cct cga aaa aag tca ggt gga agt ggg gaa agg aat tct acc cct ctc      1613
Pro Arg Lys Lys Ser Gly Gly Ser Gly Glu Arg Asn Ser Thr Pro Leu
469                 474                 479                 484

aag tca gca gct gcc atg gaa tct gcc cag tcc tca agg tta cca tgg      1661
Lys Ser Ala Ala Ala Met Glu Ser Ala Gln Ser Ser Arg Leu Pro Trp
485                 490                 495                 500

gag aca tgg ggc tca gga ggg gaa ggc aac tca gct gga ggg gca gag      1709
Glu Thr Trp Gly Ser Gly Gly Glu Gly Asn Ser Ala Gly Gly Ala Glu
501                 506                 511                 516

agg cca ggg cca atg gga gag gct gaa aag ggg gca gta ctt gcc cag      1757
Arg Pro Gly Pro Met Gly Glu Ala Glu Lys Gly Ala Val Leu Ala Gln
517                 522                 527                 532

ggt cag gga gat ggt act gtt tcc aaa gga gga agg ggc ccc ggt tcc      1805
Gly Gln Gly Asp Gly Thr Val Ser Lys Gly Gly Arg Gly Pro Gly Ser
533                 538                 543                 548

cag cat acc aaa gaa gca gaa gat aaa att ccc ttg gtc ccc tca aaa      1853
Gln His Thr Lys Glu Ala Glu Asp Lys Ile Pro Leu Val Pro Ser Lys
549                 554                 559                 564

gtg agt gtc atc aag ggc agc aga agc caa aag gag gct ttt cct ttg      1901
Val Ser Val Ile Lys Gly Ser Arg Ser Gln Lys Glu Ala Phe Pro Leu
565                 570                 575                 580

gca aag gga gag gta gac act gca cca cag ggt aat aaa gac tta aag      1949
Ala Lys Gly Glu Val Asp Thr Ala Pro Gln Gly Asn Lys Asp Leu Lys
581                 586                 591                 596

gag cat gtg ctt caa agt tcc tta tcc cag gag cat aaa gac cca aaa      1997
Glu His Val Leu Gln Ser Ser Leu Ser Gln Glu His Lys Asp Pro Lys
597                 602                 607                 612
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gca aca ccc cca tga tacaggtctg tggggaagag tgtttatatc cctacgttaa     2052
Ala Thr Pro Pro  *
613

ctttgcctag tagaggccct tctttgcact tgcttctcat ttggctattc ttttcctaag   2112

gaagtccatt ctcctctgta cagacagctg agtcacccag tctacttagt acctggttgc   2172

tgcctctgac cttttcagct tgataccctg ggctttagtg taaccaataa atctgtagtg   2232

accttacctg tattccctgt gctatcctgt gggaaggtag gaatgggcta agtatgatga   2292

atgtataggt tagggatctt ttggttttaa atcacagaaa acctaattca aactggctta   2352

aaataaaaag gatttattgg ttcatgtaac tagaaagtcc ataggtagtg ctggctccag   2412

gtgaagactt gacccagtag ttcagtatgt ctctaaatac cggactgact tttttctcac   2472

tgttgcatct tctgtaggac catttaagtc tgggccactt aatggctgcc agcattccta   2532

agattacact tttccccatt tatgtccaat cagaaaaaga aggcatcttt gtaccagaaa   2592

tctcagcaaa agccctaata ttcacactga ttaggcctgg gtcacatgtc caccctgacc   2652

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tcaccctatt gccagttcca ccaactagag tgaaagactt cctagccatt tcattaaatc   3132

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gaatgcagac cctccagatg tatccttggg aaaagcagta aaccaactaa tatttattga   3312

agacctactt tgtcctctac atagggtagc ttctgtcagg gaatcttggt tcttcccaag   3372

aaacactgat tttctttcag ggagacttca tgtgttcatt tatttccacc acagcagatt   3432

ttaagaaatt ataatatgta atatttgata tctataaaga gtatatctaa cgtgaataaa   3492

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attctgtctc ccagactgga gtgcaatggt gtgatgtcgg ttcactgcaa cctctgcctc     180

ctgggctcaa ctgatcctcc ccgctcagcc tcccaagtag ctgggactac ag    atg      235
                                                             Met
                                                              1

cac acc aca tcc ggc cga ata cat caa gca atg gta aca tct tta aat       283
His Thr Thr Ser Gly Arg Ile His Gln Ala Met Val Thr Ser Leu Asn
  2               7                  12                  17

gaa gat aat gaa agt gta act gtt gaa tgg ata gaa aat gga gat aca      331
Glu Asp Asn Glu Ser Val Thr Val Glu Trp Ile Glu Asn Gly Asp Thr
 18                  23                  28                  33

aaa ggc aaa gag att gac ctg gag agc atc ttt tca ctt aac cct gac       379
Lys Gly Lys Glu Ile Asp Leu Glu Ser Ile Phe Ser Leu Asn Pro Asp
 34                  39                  44                  49

ctt gtt cct gat gaa gaa att gaa ccc agt cca gaa aca cct cca cct       427
Leu Val Pro Asp Glu Glu Ile Glu Pro Ser Pro Glu Thr Pro Pro Pro
 50                  55                  60                  65

cca gca tcc tca gcc aaa gta aac aaa att gta aag aat cga cgg act       475
Pro Ala Ser Ser Ala Lys Val Asn Lys Ile Val Lys Asn Arg Arg Thr
 66                  71                  76                  81

gta gct tct att aag aat gac cct cct tca aga gat aat aga gtg gtt       523
Val Ala Ser Ile Lys Asn Asp Pro Pro Ser Arg Asp Asn Arg Val Val
 82                  87                  92                  97

ggt tca gca cgt gca cgg ccc agt caa ttt cct gaa cag tct tcc tct       571
Gly Ser Ala Arg Ala Arg Pro Ser Gln Phe Pro Glu Gln Ser Ser Ser
 98                 103                 108                 113

gca caa cag aat ggt agt gtt tca gat ata tct cca gtt caa gct gca       619
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Ala Gln Gln Asn Gly Ser Val Ser Asp Ile Ser Pro Val Gln Ala Ala
114                 119                 124                 129

aaa aag gaa ttt gga ccc cct tca cgt aga aaa tct aat tgt gtg aaa      667
Lys Lys Glu Phe Gly Pro Pro Ser Arg Arg Lys Ser Asn Cys Val Lys
130                 135                 140                 145

gaa gta gaa aaa ctg caa gaa aaa cga gag aaa agg aga ttg caa cag      715
Glu Val Glu Lys Leu Gln Glu Lys Arg Glu Lys Arg Arg Leu Gln Gln
146                 151                 156                 161

caa gaa ctt aga gaa aaa aga gcc cag gac gtt gat gct aca aac cca      763
Gln Glu Leu Arg Glu Lys Arg Ala Gln Asp Val Asp Ala Thr Asn Pro
162                 167                 172                 177

aat tat gaa att atg tgt atg atc aga gac ttt aga gga agt ttg gat      811
Asn Tyr Glu Ile Met Cys Met Ile Arg Asp Phe Arg Gly Ser Leu Asp
178                 183                 188                 193

tat aga cca tta aca aca gca gat cct att gat gaa cat agg ata tgt      859
Tyr Arg Pro Leu Thr Thr Ala Asp Pro Ile Asp Glu His Arg Ile Cys
194                 199                 204                 209

gtg tgt gta aga aaa cga cca ctc aat aaa aaa gaa act caa atg aaa      907
Val Cys Val Arg Lys Arg Pro Leu Asn Lys Lys Glu Thr Gln Met Lys
210                 215                 220                 225

gat ctt gat gta atc aca att cct agt aaa gat gtt gtg atg gta cat      955
Asp Leu Asp Val Ile Thr Ile Pro Ser Lys Asp Val Val Met Val His
226                 231                 236                 241

gaa cca aaa caa aaa gta gat tta aca agg tac cta gaa aac caa aca     1003
Glu Pro Lys Gln Lys Val Asp Leu Thr Arg Tyr Leu Glu Asn Gln Thr
242                 247                 252                 257

ttt cgt ttt gat tat gcc ttt gat gac tca gct cct aat gaa atg gtt     1051
Phe Arg Phe Asp Tyr Ala Phe Asp Asp Ser Ala Pro Asn Glu Met Val
258                 263                 268                 273

tac agg ttt act gct aga cca cta gtg gaa act ata ttt gaa agg gga     1099
Tyr Arg Phe Thr Ala Arg Pro Leu Val Glu Thr Ile Phe Glu Arg Gly
274                 279                 284                 289

atg gct aca tgc ttt gct tat ggg cag act gga agt gga aaa act cat     1147
Met Ala Thr Cys Phe Ala Tyr Gly Gln Thr Gly Ser Gly Lys Thr His
290                 295                 300                 305

act atg ggt ggt gac ttt tca gga aag aac caa gat tgt tct aaa gga     1195
Thr Met Gly Gly Asp Phe Ser Gly Lys Asn Gln Asp Cys Ser Lys Gly
306                 311                 316                 321

att tat gca tta gca gct cga gat gtc ttt tta atg cta aag aag cca     1243
Ile Tyr Ala Leu Ala Ala Arg Asp Val Phe Leu Met Leu Lys Lys Pro
322                 327                 332                 337

aac tat aag aag cta gaa ctt caa gta tat gca acc ttc ttt gaa att     1291
Asn Tyr Lys Lys Leu Glu Leu Gln Val Tyr Ala Thr Phe Phe Glu Ile
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338                 343                 348                 353

tat agt gga aag gtg ttt gac ttg cta aac agg aaa aca aaa tta aga      1339
Tyr Ser Gly Lys Val Phe Asp Leu Leu Asn Arg Lys Thr Lys Leu Arg
354                 359                 364                 369

gtt cta gaa gat gga aaa cag cag gtt caa gtg gtg gga tta cag gaa      1387
Val Leu Glu Asp Gly Lys Gln Gln Val Gln Val Val Gly Leu Gln Glu
370                 375                 380                 385

cgg gag gtc aaa tgt gtt gaa gat gta ctg aaa ctc att gac ata ggc      1435
Arg Glu Val Lys Cys Val Glu Asp Val Leu Lys Leu Ile Asp Ile Gly
386                 391                 396                 401

aac agt tgc aga aca tcc ggt caa aca tct gca aat gca cat tca tct      1483
Asn Ser Cys Arg Thr Ser Gly Gln Thr Ser Ala Asn Ala His Ser Ser
402                 407                 412                 417

cgg agc cat gca gtg ttt cag att att ctt aga agg aaa gga aaa cta      1531
Arg Ser His Ala Val Phe Gln Ile Ile Leu Arg Arg Lys Gly Lys Leu
418                 423                 428                 433

cat ggc aaa ttt tct ctc att gat ttg gct gga aat gaa aga gga gct      1579
His Gly Lys Phe Ser Leu Ile Asp Leu Ala Gly Asn Glu Arg Gly Ala
434                 439                 444                 449

gat act tcc agt gcg gac agg caa act agg ctt gaa ggt gct gaa att      1627
Asp Thr Ser Ser Ala Asp Arg Gln Thr Arg Leu Glu Gly Ala Glu Ile
450                 455                 460                 465

aat aaa agc ctt tta gca ctc aag gag tgc atc aga gcc tta ggt aga      1675
Asn Lys Ser Leu Leu Ala Leu Lys Glu Cys Ile Arg Ala Leu Gly Arg
466                 471                 476                 481

aat aaa cct cat act cct ttc cgt gca agt aaa ctc act cag gtg tta      1723
Asn Lys Pro His Thr Pro Phe Arg Ala Ser Lys Leu Thr Gln Val Leu
482                 487                 492                 497

aga gat tct ttc ata ggt gaa aac tct cgt acc tgc atg att gcc aca      1771
Arg Asp Ser Phe Ile Gly Glu Asn Ser Arg Thr Cys Met Ile Ala Thr
498                 503                 508                 513

atc tct cca gga atg gca tcc tgt gaa aat act ctt aat aca tta aga      1819
Ile Ser Pro Gly Met Ala Ser Cys Glu Asn Thr Leu Asn Thr Leu Arg
514                 519                 524                 529

tat gca aat agg gtc aaa gaa ttg act gta gat cca act gct gct ggt      1867
Tyr Ala Asn Arg Val Lys Glu Leu Thr Val Asp Pro Thr Ala Ala Gly
530                 535                 540                 545

gat gtt cgt cca ata atg cac cat cca cca aac cag att gat gac tta      1915
Asp Val Arg Pro Ile Met His His Pro Pro Asn Gln Ile Asp Asp Leu
546                 551                 556                 561

gag aca cag tgg ggt gtg ggg agt tcc cct cag aga gat gat cta aaa      1963
Glu Thr Gln Trp Gly Val Gly Ser Ser Pro Gln Arg Asp Asp Leu Lys
562                 567                 572                 577
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ctt ctt tgt gaa caa aat gaa gaa gaa gtc tct cca cag ttg ttt act      2011
Leu Leu Cys Glu Gln Asn Glu Glu Glu Val Ser Pro Gln Leu Phe Thr
578                 583                 588                 593

ttc cac gaa gct gtt tca caa atg gta gaa atg gaa gaa caa gtt gta      2059
Phe His Glu Ala Val Ser Gln Met Val Glu Met Glu Glu Gln Val Val
594                 599                 604                 609

gaa gat cac agg gca gtg ttc cag gaa tct att cgg tgg tta gaa gat      2107
Glu Asp His Arg Ala Val Phe Gln Glu Ser Ile Arg Trp Leu Glu Asp
610                 615                 620                 625

gaa aag gcc ctc tta gag atg act gaa gaa gta gat tat gat gtc gat      2155
Glu Lys Ala Leu Leu Glu Met Thr Glu Glu Val Asp Tyr Asp Val Asp
626                 631                 636                 641

tca tat gct aca caa ctt gaa gct att ctt gag caa aaa ata gac att      2203
Ser Tyr Ala Thr Gln Leu Glu Ala Ile Leu Glu Gln Lys Ile Asp Ile
642                 647                 652                 657

tta act gaa ctg cgg gat aaa gtg aaa tct ttc cgt gca gct cta caa      2251
Leu Thr Glu Leu Arg Asp Lys Val Lys Ser Phe Arg Ala Ala Leu Gln
658                 663                 668                 673

gag gag gaa caa gcc agc aag caa atc aac ccg aag aga ccc cgt gcc      2299
Glu Glu Glu Gln Ala Ser Lys Gln Ile Asn Pro Lys Arg Pro Arg Ala
674                 679                 684                 689

ctt taa accggcattt gctgctaaag gatacccaga accctcacta ctgtaacata       2355
Leu  *
690

caacggttca gctgtaaggg ccatttgaaa gtttggaatt ttaagtgtct gtggaaaatg   2415

ttttgtcctt cacctgaatt acatttcaat tttgtgaaac actcttttgt ctacaaaatg   2475

cttctagtcc aggaggcaca accaagaact gggattaatg aagcattttg tttcatttac   2535

acaaatagtg atttactttt ggagatcctt gtcagtttta ttttctattt gatgaagtaa   2595

gactgtggac tcaatccaga gccagatagt agggggaagc cacagcattt ccttttaact   2655

cagttcaatt tttgtagtga gactgagcag ttttaaatcc tttgcgtgca tgcatacctc   2715

atcagtgatt gtacatacct tgcccactcc tagagacagc tgtgctcacc ttttcctgct   2775

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ttccttgtca ttgtaaatta cctttgtgtg tacattttta ctgtatttga gacatttttt   2895

gtgtgtgact agttaatttt gcaggatgtg ccatatcatt gaacggaact aaagtctgtg   2955

acagtggata tagctgctgg accattccat cttatatgta aagaaatctg gaattattat   3015

tttaaaacca tataacatgt gattataatt tttcttagca ttttctttgt aaagaactac   3075
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aatataaact agttggtgta taataaaaag taatgaaatt ctgagaagag ttttatctta   3135

ggaaaataca tatatatgca gtgtgtgtgc cagtgtggta ttaacaagac taatagtgca   3195

gtttgatcct taccaatatc attacttaat ttgaagtgtt cattagcacc ccaaaatata   3255

ccttttctat gtactgttaa aagaaattgg cttctgatgc atgaacattt acatgtacat   3315

tgaaagtagt ccataataga agttagttta agccaagtgt agacagtaca ttactccctt   3375

gaaaaagaat taagttgaaa gagttgactt tgccttaaaa ggcagatcta acccaagctc   3435

catccagtac caaatgtgaa acttcattgt tgtttggtga gaatcgccaa attctcacta   3495

atacattggt atggtgtagg gcatgctact ttttaaacag cagcacttat ttttacagat   3555

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tcacaggagc caaaggggag ctatgaatag agggtcacat gagccagatt ctttactgtt   3795

cataaaaccc agagagtagt tgtgaaagat cctaatacaa ttgtgaaaag ctctgtaaac   3855

atgaaatcta aaacaaatgt agattttcac aatatgctta ttaataaatg aagtctatgg   3915

aataagtttt agagataatt tacttcagtc acctttgttt tggaaaggac tcaggttttc   3975

ttgcagctgt aagatatatt ctatttgtgt ttatttcaaa gggaagagga aggatggaca   4035

actgttacaa ttgaccttgc aaaggatatt taaaaaaaag gtagtttttg agattaacca   4095

actttcaaag ggcaataaag acatgtgaat ttgctcattt taaagcacaa cagatgatta   4155

gcttcaaatt tattatttgc attggatggg tactgtcttt ggaaagtctc cttatagaca   4215

aatatgctgc cttacactat gatggcttca ttctgatcag gtattttaaa aattagtacc   4275

agaaaagata ctggaggtaa tataatacag tccttcagct ttacagatag tgaaaactga   4335

aggccagaaa aggaactaaa actcagcagt tcataggggt agagggaaat aacctgagaa   4395

agccgagtta aatcttaaaa tttttactat aaggntagag atgatacaag tgaactctgc   4455

aaaatagttt tgtgaaatta aacaaaaaaa tctactctta atgtatat                4503


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<213> Homo sapiens

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<220>
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<222> (1)...(4617)
<223> n = a,t,c or g

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cttcggcaag atccagatcg ggatttacgt ggagatcaag cgcagtcggg atagagtctt     120

attctgtctc ccagactgga gtgcaatggt gtgatgtcgg ttcactgcaa cctctgcctc     180

ctgggctcaa ctgatcctcc ccgctcagcc tcccaagtag ctgggactac ag    atg      235
                                                             Met
                                                              1

cac acc aca tcc ggc cga ata cat caa gca atg gta aca tct tta aat       283
His Thr Thr Ser Gly Arg Ile His Gln Ala Met Val Thr Ser Leu Asn
  2                   7                  12                  17

gaa gat aat gaa agt gta act gtt gaa tgg ata gaa aat gga gat aca       331
Glu Asp Asn Glu Ser Val Thr Val Glu Trp Ile Glu Asn Gly Asp Thr
 18                  23                  28                  33

aaa ggc aaa gag att gac ctg gag agc atc ttt tca ctt aac cct gac       379
Lys Gly Lys Glu Ile Asp Leu Glu Ser Ile Phe Ser Leu Asn Pro Asp
 34                  39                  44                  49

ctt gtt cct gat gaa gaa att gaa ccc agt cca gaa aca cct cca cct       427
Leu Val Pro Asp Glu Glu Ile Glu Pro Ser Pro Glu Thr Pro Pro Pro
 50                  55                  60                  65

cca gca tcc tca gcc aaa gta aac aaa att gta aag aat cga cgg act       475
Pro Ala Ser Ser Ala Lys Val Asn Lys Ile Val Lys Asn Arg Arg Thr
 66                  71                  76                  81

gta gct tct att aag aat gac cct cct tca aga gat aat aga gtg gtt       523
Val Ala Ser Ile Lys Asn Asp Pro Pro Ser Arg Asp Asn Arg Val Val
 82                  87                  92                  97

ggt tca gca cgt gca cgg ccc agt caa ttt cct gaa cag tct tcc tct       571
Gly Ser Ala Arg Ala Arg Pro Ser Gln Phe Pro Glu Gln Ser Ser Ser
 98                 103                 108                 113

gca caa cag aat ggt agt gtt tca gat ata tct cca gtt caa gct gca       619
Ala Gln Gln Asn Gly Ser Val Ser Asp Ile Ser Pro Val Gln Ala Ala
114                 119                 124                 129

aaa aag gaa ttt gga ccc cct tca cgt aga aaa tct aat tgt gtg aaa       667
Lys Lys Glu Phe Gly Pro Pro Ser Arg Arg Lys Ser Asn Cys Val Lys
130                 135                 140                 145

gaa gta gaa aaa ctg caa gaa aaa cga gag aaa agg aga ttg caa cag       715
Glu Val Glu Lys Leu Gln Glu Lys Arg Glu Lys Arg Arg Leu Gln Gln
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146                 151                 156                 161

caa gaa ctt aga gaa aaa aga gcc cag gac gtt gat gct aca aac cca      763
Gln Glu Leu Arg Glu Lys Arg Ala Gln Asp Val Asp Ala Thr Asn Pro
162                 167                 172                 177

aat tat gaa att atg tgt atg atc aga gac ttt aga gga agt ttg gat      811
Asn Tyr Glu Ile Met Cys Met Ile Arg Asp Phe Arg Gly Ser Leu Asp
178                 183                 188                 193

tat aga cca tta aca aca gca gat cct att gat gaa cat agg ata tgt      859
Tyr Arg Pro Leu Thr Thr Ala Asp Pro Ile Asp Glu His Arg Ile Cys
194                 199                 204                 209

gtg tgt gta aga aaa cga cca ctc aat aaa aaa gaa act caa atg aaa      907
Val Cys Val Arg Lys Arg Pro Leu Asn Lys Lys Glu Thr Gln Met Lys
210                 215                 220                 225

gat ctt gat gta atc aca att cct agt aaa gat gtt gtg atg gta cat      955
Asp Leu Asp Val Ile Thr Ile Pro Ser Lys Asp Val Val Met Val His
226                 231                 236                 241

gaa cca aaa caa aaa gta gat tta aca agg tac cta gaa aac caa aca     1003
Glu Pro Lys Gln Lys Val Asp Leu Thr Arg Tyr Leu Glu Asn Gln Thr
242                 247                 252                 257

ttt cgt ttt gat tat gcc ttt gat gac tca gct cct aat gaa atg gtt     1051
Phe Arg Phe Asp Tyr Ala Phe Asp Asp Ser Ala Pro Asn Glu Met Val
258                 263                 268                 273

tac agg ttt act gct aga cca cta gtg gaa act ata ttt gaa agg gga     1099
Tyr Arg Phe Thr Ala Arg Pro Leu Val Glu Thr Ile Phe Glu Arg Gly
274                 279                 284                 289

atg gct aca tgc ttt gct tat ggg cag act gga agt gga aaa act cat     1147
Met Ala Thr Cys Phe Ala Tyr Gly Gln Thr Gly Ser Gly Lys Thr His
290                 295                 300                 305

act atg ggt ggt gac ttt tca gga aag aac caa gat tgt tct aaa gga     1195
Thr Met Gly Gly Asp Phe Ser Gly Lys Asn Gln Asp Cys Ser Lys Gly
306                 311                 316                 321

att tat gca tta gca gct cga gat gtc ttt tta atg cta aag aag cca     1243
Ile Tyr Ala Leu Ala Ala Arg Asp Val Phe Leu Met Leu Lys Lys Pro
322                 327                 332                 337

aac tat aag aag cta gaa ctt caa gta tat gca acc ttc ttt gaa att     1291
Asn Tyr Lys Lys Leu Glu Leu Gln Val Tyr Ala Thr Phe Phe Glu Ile
338                 343                 348                 353

tat agt gga aag gtg ttt gac ttg cta aac agg aaa aca aaa tta aga     1339
Tyr Ser Gly Lys Val Phe Asp Leu Leu Asn Arg Lys Thr Lys Leu Arg
354                 359                 364                 369

gtt cta gaa gat gga aaa cag cag gtt caa gtg gtg gga tta cag gaa     1387
Val Leu Glu Asp Gly Lys Gln Gln Val Gln Val Val Gly Leu Gln Glu
370                 375                 380                 385
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cgg gag gtc aaa tgt gtt gaa gat gta ctg aaa ctc att gac ata ggc      1435
Arg Glu Val Lys Cys Val Glu Asp Val Leu Lys Leu Ile Asp Ile Gly
386                 391                 396                 401

aac agt tgc aga aca tcc ggt caa aca tct gca aat gca cat tca tct      1483
Asn Ser Cys Arg Thr Ser Gly Gln Thr Ser Ala Asn Ala His Ser Ser
402                 407                 412                 417

cgg agc cat gca gtg ttt cag att att ctt aga agg aaa gga aaa cta      1531
Arg Ser His Ala Val Phe Gln Ile Ile Leu Arg Arg Lys Gly Lys Leu
418                 423                 428                 433

cat ggc aaa ttt tct ctc att gat ttg gct gga aat gaa aga gga gct      1579
His Gly Lys Phe Ser Leu Ile Asp Leu Ala Gly Asn Glu Arg Gly Ala
434                 439                 444                 449

gat act tcc agt gcg gac agg caa act agg ctt gaa ggt gct gaa att      1627
Asp Thr Ser Ser Ala Asp Arg Gln Thr Arg Leu Glu Gly Ala Glu Ile
450                 455                 460                 465

aat aaa agc ctt tta gca ctc aag gag tgc atc aga gcc tta ggt aga      1675
Asn Lys Ser Leu Leu Ala Leu Lys Glu Cys Ile Arg Ala Leu Gly Arg
466                 471                 476                 481

aat aaa cct cat act cct ttc cgt gca agt aaa ctc act cag gtg tta      1723
Asn Lys Pro His Thr Pro Phe Arg Ala Ser Lys Leu Thr Gln Val Leu
482                 487                 492                 497

aga gat tct ttc ata ggt gaa aac tct cgt acc tgc atg att gcc aca      1771
Arg Asp Ser Phe Ile Gly Glu Asn Ser Arg Thr Cys Met Ile Ala Thr
498                 503                 508                 513

atc tct cca gga atg gca tcc tgt gaa aat act ctt aat aca tta aga      1819
Ile Ser Pro Gly Met Ala Ser Cys Glu Asn Thr Leu Asn Thr Leu Arg
514                 519                 524                 529

tat gca aat aga gta aag gag ttt gga att agt cca tca gac att ccc      1867
Tyr Ala Asn Arg Val Lys Glu Phe Gly Ile Ser Pro Ser Asp Ile Pro
530                 535                 540                 545

ttc tca cag ggt agt ggc agt cgc cct gat ctc tct cct tct tat gaa      1915
Phe Ser Gln Gly Ser Gly Ser Arg Pro Asp Leu Ser Pro Ser Tyr Glu
546                 551                 556                 561

tat gac gac ttt tct cct tca gtt acc agg gtc aaa gaa ttg act gta      1963
Tyr Asp Asp Phe Ser Pro Ser Val Thr Arg Val Lys Glu Leu Thr Val
562                 567                 572                 577

gat cca act gct gct ggt gat gtt cgt cca ata atg cac cat cca cca      2011
Asp Pro Thr Ala Ala Gly Asp Val Arg Pro Ile Met His His Pro Pro
578                 583                 588                 593

aac cag att gat gac tta gag aca cag tgg ggt gtg ggg agt tcc cct      2059
Asn Gln Ile Asp Asp Leu Glu Thr Gln Trp Gly Val Gly Ser Ser Pro
594                 599                 604                 609
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cag aga gat gat cta aaa ctt ctt tgt gaa caa aat gaa gaa gaa gtc      2107
Gln Arg Asp Asp Leu Lys Leu Leu Cys Glu Gln Asn Glu Glu Glu Val
610                 615                 620                 625

tct cca cag ttg ttt act ttc cac gaa gct gtt tca caa atg gta gaa      2155
Ser Pro Gln Leu Phe Thr Phe His Glu Ala Val Ser Gln Met Val Glu
626                 631                 636                 641

atg gaa gaa caa gtt gta gaa gat cac agg gca gtg ttc cag gaa tct      2203
Met Glu Glu Gln Val Val Glu Asp His Arg Ala Val Phe Gln Glu Ser
642                 647                 652                 657

att cgg tgg tta gaa gat gaa aag gcc ctc tta gag atg act gaa gaa      2251
Ile Arg Trp Leu Glu Asp Glu Lys Ala Leu Leu Glu Met Thr Glu Glu
658                 663                 668                 673

gta gat tat gat gtc gat tca tat gct aca caa ctt gaa gct att ctt      2299
Val Asp Tyr Asp Val Asp Ser Tyr Ala Thr Gln Leu Glu Ala Ile Leu
674                 679                 684                 689

gag caa aaa ata gac att tta act gaa ctg cgg gat aaa gtg aaa tct      2347
Glu Gln Lys Ile Asp Ile Leu Thr Glu Leu Arg Asp Lys Val Lys Ser
690                 695                 700                 705

ttc cgt gca gct cta caa gag gag gaa caa gcc agc aag caa atc aac      2395
Phe Arg Ala Ala Leu Gln Glu Glu Glu Gln Ala Ser Lys Gln Ile Asn
706                 711                 716                 721

ccg aag aga ccc cgt gcc ctt taa accggcattt gctgctaaag gatacccaga     2449
Pro Lys Arg Pro Arg Ala Leu  *
722                 727

accctcacta ctgtaacata caacggttca gctgtaaggg ccatttgaaa gtttggaatt    2509

ttaagtgtct gtggaaaatg ttttgtcctt cacctgaatt acatttcaat tttgtgaaac    2569

actcttttgt ctacaaaatg cttctagtcc aggaggcaca accaagaact gggattaatg    2629

aagcattttg tttcatttac acaaatagtg atttactttt ggagatcctt gtcagtttta    2689

ttttctattt gatgaagtaa gactgtggac tcaatccaga gccagatagt agggggaagc    2749

cacagcattt ccttttaact cagttcaatt tttgtagtga gactgagcag ttttaaatcc    2809

tttgcgtgca tgcatacctc atcagtgatt gtacatacct tgcccactcc tagagacagc    2869

tgtgctcacc ttttcctgct ttgtgccttg attaaggcta ctgaccctaa atttctgaag    2929

cacagccaag aaaaattaca ttccttgtca ttgtaaatta cctttgtgtg tacattttta    2989

ctgtatttga gacatttttt gtgtgtgact agttaatttt gcaggatgtg ccatatcatt    3049

gaacggaact aaagtctgtg acagtggata tagctgctgg accattccat cttatatgta    3109

aagaaatctg gaattattat tttaaaacca tataacatgt gattataatt tttcttagca    3169

ttttctttgt aaagaactac aatataaact agttggtgta taataaaaag taatgaaatt    3229
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ctgagaagag ttttatctta ggaaaataca tatatatgca gtgtgtgtgc cagtgtggta 3289

ttaacaagac taatagtgca gtttgatcct taccaatatc attacttaat ttgaagtgtt 3349

cattagcacc ccaaaatata ccttttctat gtactgttaa aagaaattgg cttctgatgc 3409

atgaacattt acatgtacat tgaaagtagt ccataataga agttagttta agccaagtgt 3469

agacagtaca ttactccctt gaaaaagaat taagttgaaa gagttgactt tgccttaaaa 3529

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gaatcgccaa attctcacta atacattggt atggtgtagg gcatgctact ttttaaacag 3649

cagcacttat ttttacagat tgctactcca aggaagaaaa ctggccactt ttcatgtaaa 3709

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ccagggaact atcagctcct tcacaggagc caaaggggag ctatgaatag agggtcacat 3889

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ttacagatag tgaaaactga aggccagaaa aggaactaaa actcagcagt tcataggggt 4489

agagggaaat aacctgagaa agccgagtta aatcttaaaa tttttactat aaggntagag 4549

atgatacaag tgaactctgc aaaatagttt tgtgaaatta aacaaaaaaa tctactctta 4609

atgtatat 4617

<210> 295
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<212> DNA
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<222> (92)..(3928)

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cctggacatt atattaagaa ttgcccaaca a   atg ggg ata aaa act ttg aat      112
                                     Met Gly Ile Lys Thr Leu Asn
                                      1               5

ctg gtc cta gga tta aaa aga gca ctg gaa ttc cca gaa gtt ttc atg      160
Leu Val Leu Gly Leu Lys Arg Ala Leu Glu Phe Pro Glu Val Phe Met
  8                  13                  18                  23

atg gaa gtg aaa gat cct aat atg aaa ggt gca atg ctt acc aac act      208
Met Glu Val Lys Asp Pro Asn Met Lys Gly Ala Met Leu Thr Asn Thr
 24                  29                  34                  39

gga aaa tat gca ata cca act ata gat gca gaa gca tat gca att ggg      256
Gly Lys Tyr Ala Ile Pro Thr Ile Asp Ala Glu Ala Tyr Ala Ile Gly
 40                  45                  50                  55

aag aaa gag aaa cct ccc ttc tta cca gag gag cca tct tct tcc tca      304
Lys Lys Glu Lys Pro Pro Phe Leu Pro Glu Glu Pro Ser Ser Ser Ser
 56                  61                  66                  71

gaa gaa gat gat cct atc cca gat gaa ttg ttg tgt ctc atc tgc aag      352
Glu Glu Asp Asp Pro Ile Pro Asp Glu Leu Leu Cys Leu Ile Cys Lys
 72                  77                  82                  87

gat att atg act gat gct gtt gtg att ccc tgc tgt gga aac agt tac      400
Asp Ile Met Thr Asp Ala Val Val Ile Pro Cys Cys Gly Asn Ser Tyr
 88                  93                  98                 103

tgt gat gaa tgt ata aga aca gca ctc ctg gaa tca gat gag cac aca      448
Cys Asp Glu Cys Ile Arg Thr Ala Leu Leu Glu Ser Asp Glu His Thr
104                 109                 114                 119

tgt ccg acg tgt cat caa aat gat gtt tct cct gat gct tta att gcc      496
Cys Pro Thr Cys His Gln Asn Asp Val Ser Pro Asp Ala Leu Ile Ala
120                 125                 130                 135

aat aaa ttt tta cga cag gct gta aat aac ttc aaa aat gaa act ggc      544
Asn Lys Phe Leu Arg Gln Ala Val Asn Asn Phe Lys Asn Glu Thr Gly
136                 141                 146                 151

tat aca aaa aga cta cga aaa cag tta cct cct cca cca ccc cca ata      592
Tyr Thr Lys Arg Leu Arg Lys Gln Leu Pro Pro Pro Pro Pro Pro Ile
152                 157                 162                 167

cca cct ccg aga cca ctg att cag agg aac cta caa cct ctg atg aga      640
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Pro Pro Pro Arg Pro Leu Ile Gln Arg Asn Leu Gln Pro Leu Met Arg
168                 173                 178                 183

tct ccg ata tca aga caa caa gat cct ctt atg att cca gtg aca tct      688
Ser Pro Ile Ser Arg Gln Gln Asp Pro Leu Met Ile Pro Val Thr Ser
184                 189                 194                 199

tca tca act cac cca gct ccg tct ata tct tca tta act tct aat cag      736
Ser Ser Thr His Pro Ala Pro Ser Ile Ser Ser Leu Thr Ser Asn Gln
200                 205                 210                 215

tct tcc ttg gcc cct cct gtg tct gga aat ccg tct tct gct cca gct      784
Ser Ser Leu Ala Pro Pro Val Ser Gly Asn Pro Ser Ser Ala Pro Ala
216                 221                 226                 231

cct gta cct gat ata act gca aca gta tcc ata tca gtt cat tca gaa      832
Pro Val Pro Asp Ile Thr Ala Thr Val Ser Ile Ser Val His Ser Glu
232                 237                 242                 247

aaa tca gat gga cct ttt cgg gat tct gat aat aaa ata ttg cca gct      880
Lys Ser Asp Gly Pro Phe Arg Asp Ser Asp Asn Lys Ile Leu Pro Ala
248                 253                 258                 263

gca gct ctt gca tca gag cac tca aag gga acc tcc tca att gca att      928
Ala Ala Leu Ala Ser Glu His Ser Lys Gly Thr Ser Ser Ile Ala Ile
264                 269                 274                 279

acc gct ctt atg gaa gag aag ggt tac cag gtg cct gtt ctt gga acc      976
Thr Ala Leu Met Glu Glu Lys Gly Tyr Gln Val Pro Val Leu Gly Thr
280                 285                 290                 295

cca tct ttg ctt gga cag tca tta ttg cat gga cag ttg atc ccc aca     1024
Pro Ser Leu Leu Gly Gln Ser Leu Leu His Gly Gln Leu Ile Pro Thr
296                 301                 306                 311

act ggt cca gta aga ata aat act gct cgt cca ggt ggt ggt cga cca     1072
Thr Gly Pro Val Arg Ile Asn Thr Ala Arg Pro Gly Gly Gly Arg Pro
312                 317                 322                 327

ggc tgg gaa cat tcc aac aaa ctt ggc tat ctg gtt tct cca cca caa     1120
Gly Trp Glu His Ser Asn Lys Leu Gly Tyr Leu Val Ser Pro Pro Gln
328                 333                 338                 343

caa att aga aga ggg gag agg agc tgc tac aga agt ata aac cgt ggg     1168
Gln Ile Arg Arg Gly Glu Arg Ser Cys Tyr Arg Ser Ile Asn Arg Gly
344                 349                 354                 359

cga cac cac agc gaa aga tca cag agg act caa ggc ccg tca cta cca     1216
Arg His His Ser Glu Arg Ser Gln Arg Thr Gln Gly Pro Ser Leu Pro
360                 365                 370                 375

gca act cca gtc ttt gta cct gtt cca cca cct cct ttg tat ccg cct     1264
Ala Thr Pro Val Phe Val|Pro Val Pro Pro Pro Pro Leu Tyr Pro Pro
376                 381                 386                 391
                      /

cct ccc cat aca ctt cct ctc cct ccg ggt gtt cct cct cca cag ttt     1312
Pro Pro His Thr Leu Pro Leu Pro Pro Gly Val Pro Pro Pro Gln Phe
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392                 397                 402                 407

tct cct cag ttt cct cct ggc cag cca gcc acc gct ggg tat agt gtc      1360
Ser Pro Gln Phe Pro Pro Gly Gln Pro Ala Thr Ala Gly Tyr Ser Val
408                 413                 418                 423

cct cct cca ggg ttt cct cca gct cct gcc aat tta tca aca cct tgg      1408
Pro Pro Pro Gly Phe Pro Pro Ala Pro Ala Asn Leu Ser Thr Pro Trp
424                 429                 434                 439

gta tca tca gga gtg cag aca gct cat tca aat acc atc cca aca aca      1456
Val Ser Ser Gly Val Gln Thr Ala His Ser Asn Thr Ile Pro Thr Thr
440                 445                 450                 455

caa gca cca cct ttg tcc agg gaa gaa ttc tat aga gag cag cga cga      1504
Gln Ala Pro Pro Leu Ser Arg Glu Glu Phe Tyr Arg Glu Gln Arg Arg
456                 461                 466                 471

cta aaa gaa gag gaa aag aaa aag tcc aag cta gat gag ttt aca aat      1552
Leu Lys Glu Glu Glu Lys Lys Lys Ser Lys Leu Asp Glu Phe Thr Asn
472                 477                 482                 487

gat ttt gct aag gaa ttg atg gaa tac aaa aag att caa aag gag cgt      1600
Asp Phe Ala Lys Glu Leu Met Glu Tyr Lys Lys Ile Gln Lys Glu Arg
488                 493                 498                 503

agg cgc tca ttt tcc agg tct aaa tct ccc tat agt ggt tct tcg tat      1648
Arg Arg Ser Phe Ser Arg Ser Lys Ser Pro Tyr Ser Gly Ser Ser Tyr
504                 509                 514                 519

tca aga agt tca tat act tat tct aaa tca aga tct ggg tca aca cgt      1696
Ser Arg Ser Ser Tyr Thr Tyr Ser Lys Ser Arg Ser Gly Ser Thr Arg
520                 525                 530                 535

tca cgc tct tat tct cga tca ttc agc cgc tca cat tct cgt tcc tat      1744
Ser Arg Ser Tyr Ser Arg Ser Phe Ser Arg Ser His Ser Arg Ser Tyr
536                 541                 546                 551

tca cgg tca cct cca tac ccc aga aga ggc aga ggc aag agc cgc aat      1792
Ser Arg Ser Pro Pro Tyr Pro Arg Arg Gly Arg Gly Lys Ser Arg Asn
552                 557                 562                 567

tac cgt tca cgg tct aga tct cat gga tat cat cga tct agg tca agg      1840
Tyr Arg Ser Arg Ser Arg Ser His Gly Tyr His Arg Ser Arg Ser Arg
568                 573                 578                 583

tca ccc cct tac aga cgc tat cat tca cga tca aga tct cct caa gcg      1888
Ser Pro Pro Tyr Arg Arg Tyr His Ser Arg Ser Arg Ser Pro Gln Ala
584                 589                 594                 599

ttt agg gga cag tct cct aat aaa cgt aat gta cct caa ggg gaa aca      1936
Phe Arg Gly Gln Ser Pro Asn Lys Arg Asn Val Pro Gln Gly Glu Thr
600                 605                 610                 615

gaa cgt gaa tat ttt aat aga tac aga gaa gtt cca cca cca tat gac      1984
Glu Arg Glu Tyr Phe Asn Arg Tyr Arg Glu Val Pro Pro Pro Tyr Asp
616                 621                 626                 631
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atg aaa gca tat tat ggg aga agt gtt gac ttt aga gac cca ttt gaa 2032
Met Lys Ala Tyr Tyr Gly Arg Ser Val Asp Phe Arg Asp Pro Phe Glu
632 637 642 647

aaa gaa cgc tac cga gaa tgg gag aga aaa tat aga gag tgg tat gaa 2080
Lys Glu Arg Tyr Arg Glu Trp Glu Arg Lys Tyr Arg Glu Trp Tyr Glu
648 653 658 663

aaa tat tat aaa ggt tat gct gct gga gca cag cct aga ccc tca gca 2128
Lys Tyr Tyr Lys Gly Tyr Ala Ala Gly Ala Gln Pro Arg Pro Ser Ala
664 669 674 679

aat aga gag aac ttt tct cca gag aga ttt ttg cca ctt aac atc agg 2176
Asn Arg Glu Asn Phe Ser Pro Glu Arg Phe Leu Pro Leu Asn Ile Arg
680 685 690 695

aat tct ccc ttc aca aga ggc cgc aga gaa gac tat gtt ggt ggg caa 2224
Asn Ser Pro Phe Thr Arg Gly Arg Arg Glu Asp Tyr Val Gly Gly Gln
696 701 706 711

agt cat aga agt cga aac ata ggt agc aac tat cca gaa aag ctt tca 2272
Ser His Arg Ser Arg Asn Ile Gly Ser Asn Tyr Pro Glu Lys Leu Ser
712 717 722 727

gca aga gat ggt cac aat cag aag gat aat aca aag tca aaa gag aag 2320
Ala Arg Asp Gly His Asn Gln Lys Asp Asn Thr Lys Ser Lys Glu Lys
728 733 738 743

gag agt gaa aac gct cca gga gat ggt aaa gga aat aag cat aag aaa 2368
Glu Ser Glu Asn Ala Pro Gly Asp Gly Lys Gly Asn Lys His Lys Lys
744 749 754 759

cac aga tta aga aga aaa ggg gag gaa agt gag ggt ttt ctg aac cca 2416
His Arg Leu Arg Arg Lys Gly Glu Glu Ser Glu Gly Phe Leu Asn Pro
760 765 770 775

gag tta tta gag act tct agg aaa tca aga gaa cct aca ggt gtt gaa 2464
Glu Leu Leu Glu Thr Ser Arg Lys Ser Arg Glu Pro Thr Gly Val Glu
776 781 786 791

gaa aat aaa aca gac tca ttg ttt gtt ctc cca agt aga gat gat gcc 2512
Glu Asn Lys Thr Asp Ser Leu Phe Val Leu Pro Ser Arg Asp Asp Ala
792 797 802 807

aca cct gtt aga gat gaa cca atg gat gca gaa tca atc act ttt aaa 2560
Thr Pro Val Arg Asp Glu Pro Met Asp Ala Glu Ser Ile Thr Phe Lys
808 813 818 823

tca gtg tct gaa aaa gac aag aga gaa agg gat aaa cca aaa gca aag 2608
Ser Val Ser Glu Lys Asp Lys Arg Glu Arg Asp Lys Pro Lys Ala Lys
824 829 834 839

ggt gat aaa acc aaa cgg aag aat gat gga tct gct gtg tcc aaa aaa 2656
Gly Asp Lys Thr Lys Arg Lys Asn Asp Gly Ser Ala Val Ser Lys Lys
840 845 850 855

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gaa aat att gta aaa cct gct aaa gga ccc caa gaa aaa gta gat gga      2704
Glu Asn Ile Val Lys Pro Ala Lys Gly Pro Gln Glu Lys Val Asp Gly
856                 861                 866                 871

gaa cgt gag aga tct cct cga tct gaa cct cca att aaa aaa gcc aaa      2752
Glu Arg Glu Arg Ser Pro Arg Ser Glu Pro Pro Ile Lys Lys Ala Lys
872                 877                 882                 887

gag gag act ccg aag act gac aat act aaa tca tca tct tcc tct cag      2800
Glu Glu Thr Pro Lys Thr Asp Asn Thr Lys Ser Ser Ser Ser Ser Gln
888                 893                 898                 903

aag gat gaa aaa atc act gga acc ccc aga aaa gct cac tct aaa tca      2848
Lys Asp Glu Lys Ile Thr Gly Thr Pro Arg Lys Ala His Ser Lys Ser
904                 909                 914                 919

gca aaa gaa cac caa gaa aca aaa cca gtc aaa gag gaa aaa gtg aag      2896
Ala Lys Glu His Gln Glu Thr Lys Pro Val Lys Glu Glu Lys Val Lys
920                 925                 930                 935

aag gac tat tcc aaa gat gtc aaa tca gaa aag cta aca act aag gaa      2944
Lys Asp Tyr Ser Lys Asp Val Lys Ser Glu Lys Leu Thr Thr Lys Glu
936                 941                 946                 951

gaa aag gcc aag aag cct aat gag aaa aac aaa cca ctt gat aat aag      2992
Glu Lys Ala Lys Lys Pro Asn Glu Lys Asn Lys Pro Leu Asp Asn Lys
952                 957                 962                 967

gga gaa aaa aga aaa aga aaa act gaa gaa aaa ggc gta gat aaa gat      3040
Gly Glu Lys Arg Lys Arg Lys Thr Glu Glu Lys Gly Val Asp Lys Asp
968                 973                 978                 983

ttt gag tct tct tca atg aaa atc tcg aaa cta gaa gtg act gaa ata      3088
Phe Glu Ser Ser Ser Met Lys Ile Ser Lys Leu Glu Val Thr Glu Ile
984                 989                 994                 999

gtg aaa cca tca cca aag cgc aaa atg gaa cct gat act gaa aaa atg      3136
Val Lys Pro Ser Pro Lys Arg Lys Met Glu Pro Asp Thr Glu Lys Met
1000                1005                1010                1015

gat agg acc cct gaa aag gac aaa att tct tta agt gcg cca gcc aaa      3184
Asp Arg Thr Pro Glu Lys Asp Lys Ile Ser Leu Ser Ala Pro Ala Lys
1016                1021                1026                1031

aaa atc aaa ctc aac aga gaa act ggg aag aaa att gga agt aca gaa      3232
Lys Ile Lys Leu Asn Arg Glu Thr Gly Lys Lys Ile Gly Ser Thr Glu
1032                1037                1042                1047

aat ata tca aac aca aaa gaa ccc tct gaa aaa ttg gag tca aca tct      3280
Asn Ile Ser Asn Thr Lys Glu Pro Ser Glu Lys Leu Glu Ser Thr Ser
1048                1053                1058                1063

agc aaa gtt aaa caa gaa aaa gtc aaa gga aag gtc aga cga aaa gtg      3328
Ser Lys Val Lys Gln Glu Lys Val Lys Gly Lys Val Arg Arg Lys Val
1064                1069                1074                1079

act gga act gaa gga tcc agc tca act ctg gtg gat tac acc agt acg      3376
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 Thr Gly Thr Glu Gly Ser Ser Ser Thr Leu Val Asp Tyr Thr Ser Thr
1080                1085                1090                1095

 agc tca act gga ggc agt cct gtg cgg aaa tct gaa gaa aaa aca gat      3424
 Ser Ser Thr Gly Gly Ser Pro Val Arg Lys Ser Glu Glu Lys Thr Asp
1096                1101                1106                1111

 aca aag cga act gtg att aaa acg atg gaa gaa tat aat aat gac aat      3472
 Thr Lys Arg Thr Val Ile Lys Thr Met Glu Glu Tyr Asn Asn Asp Asn
1112                1117                1122                1127

 acc gcg cca gct gaa gat gtt atc att atg att cag gtt cct caa tcc      3520
 Thr Ala Pro Ala Glu Asp Val Ile Ile Met Ile Gln Val Pro Gln Ser
1128                1133                1138                1143

 aaa tgg gat aaa gat gac ttt gaa tct gaa gaa gaa gat gtt aaa tcc      3568
 Lys Trp Asp Lys Asp Asp Phe Glu Ser Glu Glu Glu Asp Val Lys Ser
1144                1149                1154                1159

 aca cag cct ata tca agt gta gga aaa cct gct agt gtt ata aaa aat      3616
 Thr Gln Pro Ile Ser Ser Val Gly Lys Pro Ala Ser Val Ile Lys Asn
1160                1165                1170                1175

 gtt agt aca aag cca tca aat ata gtc aag tat cct gag aaa gaa agt      3664
 Val Ser Thr Lys Pro Ser Asn Ile Val Lys Tyr Pro Glu Lys Glu Ser
1176                1181                1186                1191

 gag cca tcc gag aaa att cag aaa ttc acc aag gac gtg agc cat gaa      3712
 Glu Pro Ser Glu Lys Ile Gln Lys Phe Thr Lys Asp Val Ser His Glu
1192                1197                1202                1207

 atc ata caa cat gag gtt aaa agt tca aaa aac tct gca tct agt gaa      3760
 Ile Ile Gln His Glu Val Lys Ser Ser Lys Asn Ser Ala Ser Ser Glu
1208                1213                1218                1223

 aaa ggg aaa acc aaa gat cga gat tat tca gtg ttg gaa aag gag aac      3808
 Lys Gly Lys Thr Lys Asp Arg Asp Tyr Ser Val Leu Glu Lys Glu Asn
1224                1229                1234                1239

 cct gaa aag agg aag aac agc act cag cca gag aaa gag agt aat ttg      3856
 Pro Glu Lys Arg Lys Asn Ser Thr Gln Pro Glu Lys Glu Ser Asn Leu
1240                1245                1250                1255

 gac cgt ctg aat gaa caa gga aat ttt aaa agt ctg tct caa tct tcc      3904
 Asp Arg Leu Asn Glu Gln Gly Asn Phe Lys Ser Leu Ser Gln Ser Ser
1256                1261                1266                1271

 aaa gag gct aga acc gtc aga taa acatgattcc actcgtgctt cctcaaataa     3958
 Lys Glu Ala Arg Thr Val Arg  *
1272                1277

 agacttcact cccaatagag acaaaaaaac tgactatgac accagagagt attcaagttc   4018

 caaacgtaga gatgaaaaga atgaattaac aagacgaaaa gactctccct tctcgggaat   4078

 aaagattctg gcatctggga ccaggaaaaa taaacccaag gggaagaaga gagatttgnc   4138
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ctaaaaaagg gaccgggggn ttcccaaaaa aggtaattcc taggtccccc agggggccgg    4198

aaacctcctt ggttccc                                                   4215
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<400> 296
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gtgtgcgtcc gcttctcacc tcaggtctcc cttcggcccc gctgccctcc ctcgcggctg     120

ggtgacagct gggtccggtc cgtcgcgggc tgcctggggt gcgaggatcg cgcaccccgt     180

cttcgcgcgc tgtgcctgcc gccccgcccc ctcgtcccgc ccgtcccgtc gcgtcgcgtc     240

ccgtcccctc gggtgctgcc agccgggtgc tgatgcgagt cggtggcagc gaggacattt     300

tctgactccc tggcccctga cacggctgca ctttccatcc cgtcgcgggg ccggccgcta     360

ctccggcccc agg atg cag aat gtg att aat act gtg aag gga aag gca        409
               Met Gln Asn Val Ile Asn Thr Val Lys Gly Lys Ala
                1               5                  10

ctg gaa gtg gct gag tac ctg acc ccg gtc ctc aag gaa tca aag ttt       457
Leu Glu Val Ala Glu Tyr Leu Thr Pro Val Leu Lys Glu Ser Lys Phe
 13                 18                  23                  28

aag gaa aca ggt gta att acc cca gaa gag ttt gtg gca gct gga gat       505
Lys Glu Thr Gly Val Ile Thr Pro Glu Glu Phe Val Ala Ala Gly Asp
 29                 34                  39                  44

cac cta gtc cac cac tgt cca aca tgg caa tgg gct aca ggg gaa gaa       553
His Leu Val His His Cys Pro Thr Trp Gln Trp Ala Thr Gly Glu Glu
 45                 50                  55                  60

ttg aaa gtg aag gca tac cta cca aca ggc aaa caa ttt ttg gta acc       601
Leu Lys Val Lys Ala Tyr Leu Pro Thr Gly Lys Gln Phe Leu Val Thr
 61                 66                  71                  76

aaa aat gtg ccg tgc tat aag cgg tgc aaa cag atg gaa tat tca gat       649
Lys Asn Val Pro Cys Tyr Lys Arg Cys Lys Gln Met Glu Tyr Ser Asp
 77                 82                  87                  92

gaa ttg gaa gct atc att gaa gaa gat gat ggt gat ggc gga tgg gta       697
Glu Leu Glu Ala Ile Ile Glu Glu Asp Asp Gly Asp Gly Gly Trp Val
 93                 98                  103                 108
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gat aca tat cac aac aca ggt att aca gga ata acg gaa gcc gtt aaa      745
Asp Thr Tyr His Asn Thr Gly Ile Thr Gly Ile Thr Glu Ala Val Lys
109                 114                 119                 124

gag atc aca ctg gaa aat aag gac aat ata agg ctt caa gat tgc tca      793
Glu Ile Thr Leu Glu Asn Lys Asp Asn Ile Arg Leu Gln Asp Cys Ser
125                 130                 135                 140

gca cta tgt gaa gag gaa gaa gat gaa gat gaa gga gaa gct gca gat      841
Ala Leu Cys Glu Glu Glu Glu Asp Glu Asp Glu Gly Glu Ala Ala Asp
141                 146                 151                 156

atg gaa gaa tat gaa gag agt gga ttg ttg gaa aca gat gag gct acc      889
Met Glu Glu Tyr Glu Glu Ser Gly Leu Leu Glu Thr Asp Glu Ala Thr
157                 162                 167                 172

cta gat aca agg aaa ata gta gaa gct tgt aaa gcc aaa act gat gct      937
Leu Asp Thr Arg Lys Ile Val Glu Ala Cys Lys Ala Lys Thr Asp Ala
173                 178                 183                 188

ggc ggt gaa gat gct att ttg caa acc aga act tat gac ctt tac atc      985
Gly Gly Glu Asp Ala Ile Leu Gln Thr Arg Thr Tyr Asp Leu Tyr Ile
189                 194                 199                 204

act tat gat aaa tat tac cag act cca cga tta tgg ttg ttt ggc tat     1033
Thr Tyr Asp Lys Tyr Tyr Gln Thr Pro Arg Leu Trp Leu Phe Gly Tyr
205                 210                 215                 220

gat gag caa cgg cag cct tta aca gtt gag cac atg tat gaa gac atc     1081
Asp Glu Gln Arg Gln Pro Leu Thr Val Glu His Met Tyr Glu Asp Ile
221                 226                 231                 236

agt cag gat cat gtg aag aaa aca gtg acc att gaa aat cac cct cat     1129
Ser Gln Asp His Val Lys Lys Thr Val Thr Ile Glu Asn His Pro His
237                 242                 247                 252

ctg cca cca cct ccc atg tgt tca gtt cac cca tgc agg cat gct gag     1177
Leu Pro Pro Pro Pro Met Cys Ser Val His Pro Cys Arg His Ala Glu
253                 258                 263                 268

gtg atg aag aaa atc att gag act gtt gca gaa gga ggg gga gaa ctt     1225
Val Met Lys Lys Ile Ile Glu Thr Val Ala Glu Gly Gly Gly Glu Leu
269                 274                 279                 284

gga gtt cat atg tat ctt ctt att ttc ttg aaa ttt gta caa gct gtc     1273
Gly Val His Met Tyr Leu Leu Ile Phe Leu Lys Phe Val Gln Ala Val
285                 290                 295                 300

att cca aca ata gaa tat gac tac aca aga cac ttc aca atg taa tga     1321
Ile Pro Thr Ile Glu Tyr Asp Tyr Thr Arg His Phe Thr Met  *
301                 306                 311

agagagcata aaatctatcc taattattgg ttctgatttt taaagaatta acccatagat   1381

gtgaccattg accatattca tcaatatata cagtttctct aataagggac ttatatgttt   1441

atgcattaaa taaaaatatg ttccactacc agccttactt gtttaataaa aatcagtgca   1501
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aagagaaaaa aaaaaaaaaa a                                                 1522



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taaaaatggc gaaatggggg taggcggcgc tggacctgaa gagatggggc gcgcaggtgg     180

ggcggttgtc agagccccct gacgtgggcg ccgggctttt atcggcgatt tgatctggcg     240

acctcgggcc ggcgcctaag aggtcagact gcggagcctg cgggtcgcca gcggccccgc     300

cgagagccgg aggca atg gat gaa cag agc gtg gag agc att gct gag gtt     351
                 Met Asp Glu Gln Ser Val Glu Ser Ile Ala Glu Val
                 1               5                   10

ttc cga tgt ttc att tgt atg gag aaa ttg cgg gat gca cgc ctg tgt      399
Phe Arg Cys Phe Ile Cys Met Glu Lys Leu Arg Asp Ala Arg Leu Cys
13                  18                  23                  28

cct cat tgc tcc aaa ctg tgt tgt ttc agc tgt att agg cgc tgg ctg      447
Pro His Cys Ser Lys Leu Cys Cys Phe Ser Cys Ile Arg Arg Trp Leu
29                  34                  39                  44

aca gag cag aga gct caa tgt cct cat tgc cgt gct cca ctc cag cta      495
Thr Glu Gln Arg Ala Gln Cys Pro His Cys Arg Ala Pro Leu Gln Leu
45                  50                  55                  60

cga gaa cta gta aat tgt cgt tgg gca gaa gaa gta aca caa cag ctt      543
Arg Glu Leu Val Asn Cys Arg Trp Ala Glu Glu Val Thr Gln Gln Leu
61                  66                  71                  76

gat act ctt caa ctc tgc agt ctc acc aaa cat gaa gaa aat gaa aag      591
Asp Thr Leu Gln Leu Cys Ser Leu Thr Lys His Glu Glu Asn Glu Lys
77                  82                  87                  92

gac aaa tgt gaa aat cac cat gaa aaa ctt agt gta ttt tgc tgg act      639
Asp Lys Cys Glu Asn His His Glu Lys Leu Ser Val Phe Cys Trp Thr
93                  98                  103                 108

tgt aag aag tgt atc tgc cat cag tgt gca ctt tgg gga gga atg cat      687
Cys Lys Lys Cys Ile Cys His Gln Cys Ala Leu Trp Gly Gly Met His
109                 114                 119                 124
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ggc gga cat acc ttt aaa cct ttg gca gaa att tat gag caa cac gtc       735
Gly Gly His Thr Phe Lys Pro Leu Ala Glu Ile Tyr Glu Gln His Val
125                 130                 135                 140

act aaa gtg aat gaa gag gta gcc aaa ctt cgt cgg cgt ctc atg gaa       783
Thr Lys Val Asn Glu Glu Val Ala Lys Leu Arg Arg Arg Leu Met Glu
141                 146                 151                 156

ctg atc agc tta gtt caa gaa gtg gaa agg aat gta gaa gct gta aga       831
Leu Ile Ser Leu Val Gln Glu Val Glu Arg Asn Val Glu Ala Val Arg
157                 162                 167                 172

aat gca aaa gat gag cgt gtt cgg gaa att agg aat gca gtg gag atg       879
Asn Ala Lys Asp Glu Arg Val Arg Glu Ile Arg Asn Ala Val Glu Met
173                 178                 183                 188

atg att gca cgg tta gac aca cag ctg aag aat aag ctt ata aca ctg       927
Met Ile Ala Arg Leu Asp Thr Gln Leu Lys Asn Lys Leu Ile Thr Leu
189                 194                 199                 204

atg ggt cag aag aca tct cta acc caa gaa aca gag ctt ttg gaa tcc       975
Met Gly Gln Lys Thr Ser Leu Thr Gln Glu Thr Glu Leu Leu Glu Ser
205                 210                 215                 220

tta ctt cag gag gtg gag cac cag ttg cgg tct tgt agt aag agt gag      1023
Leu Leu Gln Glu Val Glu His Gln Leu Arg Ser Cys Ser Lys Ser Glu
221                 226                 231                 236

ttg ata tct aag agc tca gag atc ctt atg atg ttt cag caa gtt cat      1071
Leu Ile Ser Lys Ser Ser Glu Ile Leu Met Met Phe Gln Gln Val His
237                 242                 247                 252

cgg aag ccc atg gca tct ttt gtt acc act cct gtt cca cca gac ttt      1119
Arg Lys Pro Met Ala Ser Phe Val Thr Thr Pro Val Pro Pro Asp Phe
253                 258                 263                 268

acc agt gaa tta gtg cca tct tac gat tca gct act ttt gtt tta gag      1167
Thr Ser Glu Leu Val Pro Ser Tyr Asp Ser Ala Thr Phe Val Leu Glu
269                 274                 279                 284

aat ttc agc act ttg cgt cag aga gca gat cct gtt tac agt cca cct      1215
Asn Phe Ser Thr Leu Arg Gln Arg Ala Asp Pro Val Tyr Ser Pro Pro
285                 290                 295                 300

ctt caa gtt tca gga ctt tgc tgg agg tta aaa gtt tac cca gat gga      1263
Leu Gln Val Ser Gly Leu Cys Trp Arg Leu Lys Val Tyr Pro Asp Gly
301                 306                 311                 316

aat gga gtt gtg cga ggt tac tac tta tct gtg ttt ctg gag ctc tca      1311
Asn Gly Val Val Arg Gly Tyr Tyr Leu Ser Val Phe Leu Glu Leu Ser
317                 322                 327                 332

gct ggc ttg cct gaa act tct aaa tat gaa tat cgt gta gag atg gtt      1359
Ala Gly Leu Pro Glu Thr Ser Lys Tyr Glu Tyr Arg Val Glu Met Val
333                 338                 343                 348
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cac cag tcc tgt aat gat cct aca aaa aat atc att cga gaa ttt gca      1407
His Gln Ser Cys Asn Asp Pro Thr Lys Asn Ile Ile Arg Glu Phe Ala
349                 354                 359                 364

tct gac ttt gaa gtt gga gaa tgc tgg ggc tat aat aga ttt ttc cgt      1455
Ser Asp Phe Glu Val Gly Glu Cys Trp Gly Tyr Asn Arg Phe Phe Arg
365                 370                 375                 380

ttg gac tta ctc gca aat gaa gga tac ttg aat cca caa aat gat aca      1503
Leu Asp Leu Leu Ala Asn Glu Gly Tyr Leu Asn Pro Gln Asn Asp Thr
381                 386                 391                 396

gtg att tta agg ttt cag gta cgt tca cca act ttc ttt caa aaa tcc      1551
Val Ile Leu Arg Phe Gln Val Arg Ser Pro Thr Phe Phe Gln Lys Ser
397                 402                 407                 412

cgg gac cag cat tgg tac att act cag ttg gaa gct gca cag act agt      1599
Arg Asp Gln His Trp Tyr Ile Thr Gln Leu Glu Ala Ala Gln Thr Ser
413                 418                 423                 428

tat atc caa caa ata aac aac ctt aaa gag aga ctt act att gag ctg      1647
Tyr Ile Gln Gln Ile Asn Asn Leu Lys Glu Arg Leu Thr Ile Glu Leu
429                 434                 439                 444

tct cga act cag aag tca aga gat ttg tca cca cca gat aac cat ctt      1695
Ser Arg Thr Gln Lys Ser Arg Asp Leu Ser Pro Pro Asp Asn His Leu
445                 450                 455                 460

agc ccc caa aat gat gat gct ctg gag aca cga gct aag aag tct gca      1743
Ser Pro Gln Asn Asp Asp Ala Leu Glu Thr Arg Ala Lys Lys Ser Ala
461                 466                 471                 476

tgc tct gac atg ctt ctc gaa ggt ggt cct act aca gct tct gta aga      1791
Cys Ser Asp Met Leu Leu Glu Gly Gly Pro Thr Thr Ala Ser Val Arg
477                 482                 487                 492

gag gcc aaa gag gat gaa gaa gat gag gag aag att cag aat gaa gat      1839
Glu Ala Lys Glu Asp Glu Glu Asp Glu Glu Lys Ile Gln Asn Glu Asp
493                 498                 503                 508

tat cat cac gag ctt tca gat gga gat ctg gat ctg gat ctt gtt tat      1887
Tyr His His Glu Leu Ser Asp Gly Asp Leu Asp Leu Asp Leu Val Tyr
509                 514                 519                 524

gag gat gaa gta aat cag ctc gat ggc agc agt tcc tct gct agt tcc      1935
Glu Asp Glu Val Asn Gln Leu Asp Gly Ser Ser Ser Ser Ala Ser Ser
525                 530                 535                 540

aca gca aca agt aat aca gaa gaa aat gat att gat gaa gaa act atg      1983
Thr Ala Thr Ser Asn Thr Glu Glu Asn Asp Ile Asp Glu Glu Thr Met
541                 546                 551                 556

tct gga gaa aat gat gtg gaa tat aac aac atg gaa tta gaa gag gga      2031
Ser Gly Glu Asn Asp Val Glu Tyr Asn Asn Met Glu Leu Glu Glu Gly
557                 562                 567                 572

gaa ctc atg gaa gat gca gct gct gca gga ccc gca ggt agt agc cat      2079
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Glu Leu Met Glu Asp Ala Ala Ala Ala Gly Pro Ala Gly Ser Ser His
573                 578                 583                 588

ggt tat gtg ggt tcc agt agt aga ata tca aga aga aca cat tta tgc      2127
Gly Tyr Val Gly Ser Ser Ser Arg Ile Ser Arg Arg Thr His Leu Cys
589                 594                 599                 604

tcc gct gct acc agt agt tta cta gac att gat cca tta att tta ata      2175
Ser Ala Ala Thr Ser Ser Leu Leu Asp Ile Asp Pro Leu Ile Leu Ile
605                 610                 615                 620

cat ttg ttg gac ctt aag gac cgg agc agt ata gaa aat ttg tgg ggc      2223
His Leu Leu Asp Leu Lys Asp Arg Ser Ser Ile Glu Asn Leu Trp Gly
621                 626                 631                 636

tta cag cct cgc cca cct gct tca ctt ctg cag ccc aca gca tca tat      2271
Leu Gln Pro Arg Pro Pro Ala Ser Leu Leu Gln Pro Thr Ala Ser Tyr
637                 642                 647                 652

tct cga aaa gat aaa gac caa agg aag caa cag gca atg tgg cga gtg      2319
Ser Arg Lys Asp Lys Asp Gln Arg Lys Gln Gln Ala Met Trp Arg Val
653                 658                 663                 668

ccc tct gat tta aag atg cta aaa aga ctc aaa act caa atg gcc gaa      2367
Pro Ser Asp Leu Lys Met Leu Lys Arg Leu Lys Thr Gln Met Ala Glu
669                 674                 679                 684

gtt cga tgt atg aaa act gat gta aag aat aca ctt tca gaa ata aaa      2415
Val Arg Cys Met Lys Thr Asp Val Lys Asn Thr Leu Ser Glu Ile Lys
685                 690                 695                 700

agc agc agt gct gct tct gga gac atg cag aca agc ctt ttt tct gct      2463
Ser Ser Ser Ala Ala Ser Gly Asp Met Gln Thr Ser Leu Phe Ser Ala
701                 706                 711                 716

gac cag gca gct ctg gct gca tgt gga act gaa aac tct ggc aga ttg      2511
Asp Gln Ala Ala Leu Ala Ala Cys Gly Thr Glu Asn Ser Gly Arg Leu
717                 722                 727                 732

cag gat ttg gga atg gaa ctc ctg gca aag tca tca gtt gcc aat tgt      2559
Gln Asp Leu Gly Met Glu Leu Leu Ala Lys Ser Ser Val Ala Asn Cys
733                 738                 743                 748

tac ata cga aac tcc aca aat aag aag agt aat tcg ccc aag cca gct      2607
Tyr Ile Arg Asn Ser Thr Asn Lys Lys Ser Asn Ser Pro Lys Pro Ala
749                 754                 759                 764

cga tcc agt gta gca ggt agt cta tca ctt cga aga gca gtg gac cct      2655
Arg Ser Ser Val Ala Gly Ser Leu Ser Leu Arg Arg Ala Val Asp Pro
765                 770                 775                 780

gga gaa aat agt cgt tca aag gga gac tgt cag act ctg tct gaa ggc      2703
Gly Glu Asn Ser Arg Ser Lys Gly Asp Cys Gln Thr Leu Ser Glu Gly
781                 786                 791                 796

tcc cca gga agc tct cag tct ggg agc agg cac agt tct ccc cga gcc      2751
Ser Pro Gly Ser Ser Gln Ser Gly Ser Arg His Ser Ser Pro Arg Ala
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797                 802                 807                 812

ttg ata cat ggc agt atc ggt gat att ctg cca aaa act gaa gac cgg      2799
Leu Ile His Gly Ser Ile Gly Asp Ile Leu Pro Lys Thr Glu Asp Arg
813                 818                 823                 828

cag tgt aaa gct ttg gat tca gat gct gtt gtg gtt gca gtt ttc agt      2847
Gln Cys Lys Ala Leu Asp Ser Asp Ala Val Val Val Ala Val Phe Ser
829                 834                 839                 844

ggc ttg cct gcg gtt gag aaa agg agg aaa atg gtc acc ttg ggg gct      2895
Gly Leu Pro Ala Val Glu Lys Arg Arg Lys Met Val Thr Leu Gly Ala
845                 850                 855                 860

aat gct aaa gga ggt cat ctg gaa gga ctg cag atg act gat ttg gaa      2943
Asn Ala Lys Gly Gly His Leu Glu Gly Leu Gln Met Thr Asp Leu Glu
861                 866                 871                 876

aat aat tct gaa act gga gag tta cag cct gta cta cct gaa gga gct      2991
Asn Asn Ser Glu Thr Gly Glu Leu Gln Pro Val Leu Pro Glu Gly Ala
877                 882                 887                 892

tca gct gcc cct gaa gaa gga atg agt agc gac agt gac att gaa tgt      3039
Ser Ala Ala Pro Glu Glu Gly Met Ser Ser Asp Ser Asp Ile Glu Cys
893                 898                 903                 908

gac act gag aat gag gag cag gaa gag cat acc agt gtg ggc ggg ttt      3087
Asp Thr Glu Asn Glu Glu Gln Glu Glu His Thr Ser Val Gly Gly Phe
909                 914                 919                 924

cac gac tcc ttc atg gtc atg aca cag ccc ccg gat gaa gat aca cat      3135
His Asp Ser Phe Met Val Met Thr Gln Pro Pro Asp Glu Asp Thr His
925                 930                 935                 940

tcc agt ttt cct gat ggt gaa caa ata ggc cct gaa gat ctc agc ttc      3183
Ser Ser Phe Pro Asp Gly Glu Gln Ile Gly Pro Glu Asp Leu Ser Phe
941                 946                 951                 956

aat aca gat gaa aat agt gga agg taa ttgcc aaatcaagag aactgacttg      3235
Asn Thr Asp Glu Asn Ser Gly Arg  *
957                 962

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aatcagattt ggtcttattt cttcattatc tcgacctgaa atagtaattt ggaaactgtt    3355

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ctccaggccc tgcatgccgt cagtaacccg cccggcattg gtgctctact gtctttggct    3595

agagcttagt tgtgtttaaa taatcatctt tatatttggg gttttaatta cagttccatt    3655

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gacacgtgta agattattta aaattctttc atttttttct gcctcttact atacgactgt   3955

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ttcagtgtca acacatttaa agattcattc atgttgcaca gtggcttaca tgaacgtgaa   4075

actgtgatat aaggttttct ttcatactca taattagccc aaaacagttg ccaaactttg   4135

ccattgtgct cctgcatttg tgtttgagct gctatatatt tgtggaaatt acactgaaag   4195

ttgactaaga gactattgaa aaagcatgaa taattaaata tacatgtgag agacatctca   4255

tctgctgtat tttacttagt gaatattgtt cactcttccg tgtctgatgt cttgctgaat   4315

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gaggaggaaa ttgttcctcg tctgataaga caacagtgga gaaaggacgc atgctgtttc    300

ttagggacac ggctgacttc cagat atg acc atg tat ttg tgg ctt aaa ctc     352
                            Met Thr Met Tyr Leu Trp Leu Lys Leu
                             1               5

ttg gca ttt ggc ttt gcc ttt ctg gac aca gaa gta ttt gtg aca ggg     400
Leu Ala Phe Gly Phe Ala Phe Leu Asp Thr Glu Val Phe Val Thr Gly
 10                  15                  20                  25

caa agc cca aca cct tcc ccc act gat gcc tac ctt aat gcc tct gaa     448
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Gln Ser Pro Thr Pro Ser Pro Thr Asp Ala Tyr Leu Asn Ala Ser Glu
 26                 31                  36                  41

aca acc act ctg agc cct tct gga agc gct gtc att tca acc aca aca      496
Thr Thr Thr Leu Ser Pro Ser Gly Ser Ala Val Ile Ser Thr Thr Thr
 42                 47                  52                  57

ata gct act act cca tct aag cca aca tgt gat gaa aaa tat gca aac      544
Ile Ala Thr Thr Pro Ser Lys Pro Thr Cys Asp Glu Lys Tyr Ala Asn
 58                 63                  68                  73

atc act gtg gat tac tta tat aac aag gaa act aaa tta ttt aca gca      592
Ile Thr Val Asp Tyr Leu Tyr Asn Lys Glu Thr Lys Leu Phe Thr Ala
 74                 79                  84                  89

aag cta aat gtt aat gag aat gtg gaa tgt gga aac aat act tgc aca      640
Lys Leu Asn Val Asn Glu Asn Val Glu Cys Gly Asn Asn Thr Cys Thr
 90                 95                 100                 105

aac aat gag gtg cat aac ctt aca gaa tgt aaa aat gcg tct gtt tcc      688
Asn Asn Glu Val His Asn Leu Thr Glu Cys Lys Asn Ala Ser Val Ser
106                111                 116                 121

ata tct cat aat tca tgt act gct cct gat aag aca tta ata tta gat      736
Ile Ser His Asn Ser Cys Thr Ala Pro Asp Lys Thr Leu Ile Leu Asp
122                127                 132                 137

gtg cca cca ggg gtt gaa aag ttt cag tta cat gat tgt aca caa gtt      784
Val Pro Pro Gly Val Glu Lys Phe Gln Leu His Asp Cys Thr Gln Val
138                143                 148                 153

gaa aaa gca gat act act att tgt tta aaa tgg aaa aat att gaa acc      832
Glu Lys Ala Asp Thr Thr Ile Cys Leu Lys Trp Lys Asn Ile Glu Thr
154                159                 164                 169

ttt act tgt gat aca cag aat att acc tac aga ttt cag tgt ggt aat      880
Phe Thr Cys Asp Thr Gln Asn Ile Thr Tyr Arg Phe Gln Cys Gly Asn
170                175                 180                 185

atg ata ttt gat aat aaa gaa att aaa tta gaa aac ctt gaa ccc gaa      928
Met Ile Phe Asp Asn Lys Glu Ile Lys Leu Glu Asn Leu Glu Pro Glu
186                191                 196                 201

cat gag tat aag tgt gac tca gaa ata ctc tat aat aac cac aag ttt      976
His Glu Tyr Lys Cys Asp Ser Glu Ile Leu Tyr Asn Asn His Lys Phe
202                207                 212                 217

act aac gca agt aaa att att aaa aca gat ttt ggg agt cca gga gag     1024
Thr Asn Ala Ser Lys Ile Ile Lys Thr Asp Phe Gly Ser Pro Gly Glu
218                223                 228                 233

cct cag att att ttt tgt aga agt gaa gct gca cat caa gga gta att     1072
Pro Gln Ile Ile Phe Cys Arg Ser Glu Ala Ala His Gln Gly Val Ile
234                239                 244                 249

acc tgg aat ccc cct caa aga tca ttt cat aat ttt acc ctc tgt tat     1120
Thr Trp Asn Pro Pro Gln Arg Ser Phe His Asn Phe Thr Leu Cys Tyr
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250                 255                 260                 265

ata aaa gag aca gaa aaa gat tgc ctc aat ctg gat aaa aac ctg atc      1168
Ile Lys Glu Thr Glu Lys Asp Cys Leu Asn Leu Asp Lys Asn Leu Ile
266                 271                 276                 281

aaa tat gat ttg caa aat tta aaa cct tat acg aaa tat gtt tta tca      1216
Lys Tyr Asp Leu Gln Asn Leu Lys Pro Tyr Thr Lys Tyr Val Leu Ser
282                 287                 292                 297

tta cat gcc tac atc att gca aaa gtg caa cgt aat gga agt gct gca      1264
Leu His Ala Tyr Ile Ile Ala Lys Val Gln Arg Asn Gly Ser Ala Ala
298                 303                 308                 313

atg tgt cat ttc aca act aaa agt gct cct cca agc cag gtc tgg aac      1312
Met Cys His Phe Thr Thr Lys Ser Ala Pro Pro Ser Gln Val Trp Asn
314                 319                 324                 329

atg act gtc tcc atg aca tca gat aat agt atg cat gtc aag tgt agg      1360
Met Thr Val Ser Met Thr Ser Asp Asn Ser Met His Val Lys Cys Arg
330                 335                 340                 345

cct ccc agg gac cgt aat ggc ccc cat gaa cgt tac cat ttg gaa gtt      1408
Pro Pro Arg Asp Arg Asn Gly Pro His Glu Arg Tyr His Leu Glu Val
346                 351                 356                 361

gaa gct gga aat act ctg gtt aga aat gag tcg cat aag aat tgc gat      1456
Glu Ala Gly Asn Thr Leu Val Arg Asn Glu Ser His Lys Asn Cys Asp
362                 367                 372                 377

ttc cgt gta aaa gat ctt caa tat tca aca gac tac act ttt aag gcc      1504
Phe Arg Val Lys Asp Leu Gln Tyr Ser Thr Asp Tyr Thr Phe Lys Ala
378                 383                 388                 393

tat ttt cac aat gga gac tat cct gga gaa ccc ttt att tta cat cat      1552
Tyr Phe His Asn Gly Asp Tyr Pro Gly Glu Pro Phe Ile Leu His His
394                 399                 404                 409

tca aca tct tat aat tct aag gca ctg ata gca ttt ctg gca ttt ctg      1600
Ser Thr Ser Tyr Asn Ser Lys Ala Leu Ile Ala Phe Leu Ala Phe Leu
410                 415                 420                 425

att att gtg aca tca ata gcc ctg ctt gtt gtt ctc tac aaa atc tat      1648
Ile Ile Val Thr Ser Ile Ala Leu Leu Val Val Leu Tyr Lys Ile Tyr
426                 431                 436                 441

gat cta cat aag aaa aga tcc tgc aat tta gat gaa cag cag gag ctt      1696
Asp Leu His Lys Lys Arg Ser Cys Asn Leu Asp Glu Gln Gln Glu Leu
442                 447                 452                 457

gtt gaa agg gat gat gaa aaa caa ctg atg aat gtg gag cca atc cat      1744
Val Glu Arg Asp Asp Glu Lys Gln Leu Met Asn Val Glu Pro Ile His
458                 463                 468                 473

gca gat att ttg ttg gaa act tat aag agg aag att gct gat gaa gga      1792
Ala Asp Ile Leu Leu Glu Thr Tyr Lys Arg Lys Ile Ala Asp Glu Gly
474                 479                 484                 489
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aga ctt ttt ctg gct gaa ttt cag agc atc ccg cgg gtg ttc agc aag      1840
Arg Leu Phe Leu Ala Glu Phe Gln Ser Ile Pro Arg Val Phe Ser Lys
490                 495                 500                 505

ttt cct ata aag gaa gct cga aag ccc ttt aac cag aat aaa aac cgt      1888
Phe Pro Ile Lys Glu Ala Arg Lys Pro Phe Asn Gln Asn Lys Asn Arg
506                 511                 516                 521

tat gtt gac att ctt cct tat gat tat aac cgt gtt gaa ctc tct gag      1936
Tyr Val Asp Ile Leu Pro Tyr Asp Tyr Asn Arg Val Glu Leu Ser Glu
522                 527                 532                 537

ata aac gga gat gca ggg tca aac tac ata aat gcc agc tat att gat      1984
Ile Asn Gly Asp Ala Gly Ser Asn Tyr Ile Asn Ala Ser Tyr Ile Asp
538                 543                 548                 553

ggt ttc aaa gaa ccc agg aaa tac att gct gca caa ggt ccc agg gat      2032
Gly Phe Lys Glu Pro Arg Lys Tyr Ile Ala Ala Gln Gly Pro Arg Asp
554                 559                 564                 569

gaa act gtt gat gat ttc tgg agg atg att tgg gaa cag aaa gcc aca      2080
Glu Thr Val Asp Asp Phe Trp Arg Met Ile Trp Glu Gln Lys Ala Thr
570                 575                 580                 585

gtt att gtc atg gtc act cga tgt gaa gaa gga aac agg aac aag tgt      2128
Val Ile Val Met Val Thr Arg Cys Glu Glu Gly Asn Arg Asn Lys Cys
586                 591                 596                 601

gca gaa tac tgg ccg tca atg gaa gag ggc act cgg gct ttt gga gat      2176
Ala Glu Tyr Trp Pro Ser Met Glu Glu Gly Thr Arg Ala Phe Gly Asp
602                 607                 612                 617

gtt gtt gta aag atc aac cag cac aaa aga tgt cca gat tac atc att      2224
Val Val Val Lys Ile Asn Gln His Lys Arg Cys Pro Asp Tyr Ile Ile
618                 623                 628                 633

cag aaa ttg aac att gta aaa aaa aaa aaa aaa agc aac tgg aag aga      2272
Gln Lys Leu Asn Ile Val Lys Lys Lys Lys Lys Ser Asn Trp Lys Arg
634                 639                 644                 649

ggt gac tca cat tca gtt cac cag ctg gcc aga cca cgg ggt gcc tga      2320
Gly Asp Ser His Ser Val His Gln Leu Ala Arg Pro Arg Gly Ala  *
650                 655                 660                 665

ggatcctcac ttgctcctca aactgagaag gagagtgaat gccttcagca atttcttcag   2380

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aggaggatct ggaggtccaa gagaacaatg aggatgctgc tcatgtttta acggaactgg 240

aggtaacg atg cac cat gct ctc tta cag gaa gtg gac gtt gtg gta gca 290
Met His His Ala Leu Leu Gln Glu Val Asp Val Val Val Ala
1 5 10

cca tgc caa ggc ctc cgg ccc aca gtg gat gtt ctg ggt gac ttg gtg 338
Pro Cys Gln Gly Leu Arg Pro Thr Val Asp Val Leu Gly Asp Leu Val
15 20 25 30

aat gat ttc ttg cct gtg ata acc tat gca ctc cac aaa gat gaa ctc 386
Asn Asp Phe Leu Pro Val Ile Thr Tyr Ala Leu His Lys Asp Glu Leu
31 36 41 46

tct gag agg gat gag caa gag ctt cag gaa atc cga aag tat ttc tcc 434
Ser Glu Arg Asp Glu Gln Glu Leu Gln Glu Ile Arg Lys Tyr Phe Ser
47 52 57 62

ttt cct gta ttc ttt ttc aaa gtg ccg aaa ctg ggc tcg gag ata ata 482
Phe Pro Val Phe Phe Phe Lys Val Pro Lys Leu Gly Ser Glu Ile Ile
63 68 73 78

gac tcc tca acc agg aga atg gag agc gaa aga tca ccg ctt tat cgc 530

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Asp Ser Ser Thr Arg Arg Met Glu Ser Glu Arg Ser Pro Leu Tyr Arg
 79                 84                  89                  94

cag cta att gac ctg ggc tat ctg agc agc agt cac tgg aac tgt ggg      578
Gln Leu Ile Asp Leu Gly Tyr Leu Ser Ser Ser His Trp Asn Cys Gly
 95                 100                 105                 110

gct cct ggc cag gat act aaa gct cag agc atg ttg gtg gaa cag agt      626
Ala Pro Gly Gln Asp Thr Lys Ala Gln Ser Met Leu Val Glu Gln Ser
111                 116                 121                 126

gaa aag ctg aga cac ttg agc aca ttt tct cac cag gtg tta cag act      674
Glu Lys Leu Arg His Leu Ser Thr Phe Ser His Gln Val Leu Gln Thr
127                 132                 137                 142

cgc ctg gtg gat gca gcc aag gcc ctg aac ctg gtg cac tgc cac tgc      722
Arg Leu Val Asp Ala Ala Lys Ala Leu Asn Leu Val His Cys His Cys
143                 148                 153                 158

ctt gac atc ttt att aac cag gca ttt gac atg cag cgg gac ctg cag      770
Leu Asp Ile Phe Ile Asn Gln Ala Phe Asp Met Gln Arg Asp Leu Gln
159                 164                 169                 174

atc act ccc aaa cgt ctg gaa tat act cga aaa aag gag aat gag ttg      818
Ile Thr Pro Lys Arg Leu Glu Tyr Thr Arg Lys Lys Glu Asn Glu Leu
175                 180                 185                 190

tat gaa tca ttg atg aat att gcc aac cga aag cag gag gaa atg aag      866
Tyr Glu Ser Leu Met Asn Ile Ala Asn Arg Lys Gln Glu Glu Met Lys
191                 196                 201                 206

gat atg att gtt gag aca ctt aat acc atg aag gag gaa ctt ctg gat      914
Asp Met Ile Val Glu Thr Leu Asn Thr Met Lys Glu Glu Leu Leu Asp
207                 212                 217                 222

gat gct act aac atg gag ttt aaa gac gtc att gtc cct gag agt gga      962
Asp Ala Thr Asn Met Glu Phe Lys Asp Val Ile Val Pro Glu Ser Gly
223                 228                 233                 238

gaa cca gta ggc acc aga gag atc aaa tgc tgc atc cga cag atc cag     1010
Glu Pro Val Gly Thr Arg Glu Ile Lys Cys Cys Ile Arg Gln Ile Gln
239                 244                 249                 254

gaa ctc atc atc tcc cga ctt aat cag gca gtg gct aat aag ctg atc     1058
Glu Leu Ile Ile Ser Arg Leu Asn Gln Ala Val Ala Asn Lys Leu Ile
255                 260                 265                 270

agc tca gtg gat tac ctg agg gaa agc ttc gtc gga acc ctg gaa cga     1106
Ser Ser Val Asp Tyr Leu Arg Glu Ser Phe Val Gly Thr Leu Glu Arg
271                 276                 281                 286

tgt ctg cag agc ctg gag aag tct cag gat gtc tca gtt cac atc acc     1154
Cys Leu Gln Ser Leu Glu Lys Ser Gln Asp Val Ser Val His Ile Thr
287                 292                 297                 302

agt aat tat ctc aaa cag atc tta aat gct gcc tat cat gtt gaa gtc     1202
Ser Asn Tyr Leu Lys Gln Ile Leu Asn Ala Ala Tyr His Val Glu Val
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303                 308                 313                 318

acg ttt cac tca ggg tcg tca gtt aca agg atg cta tgg gag caa atc      1250
Thr Phe His Ser Gly Ser Ser Val Thr Arg Met Leu Trp Glu Gln Ile
319                 324                 329                 334

aaa cag atc atc cag cgc atc aca tgg gtg agc cca cct gcc atc act      1298
Lys Gln Ile Ile Gln Arg Ile Thr Trp Val Ser Pro Pro Ala Ile Thr
335                 340                 345                 350

ctg gaa tgg aag agg aag gtg gcc cag gaa gcc att gag agc ctc agc      1346
Leu Glu Trp Lys Arg Lys Val Ala Gln Glu Ala Ile Glu Ser Leu Ser
351                 356                 361                 366

gcc tcc aaa ttg gct aag agc att tgc agc caa ttc cgg act cgg ctc      1394
Ala Ser Lys Leu Ala Lys Ser Ile Cys Ser Gln Phe Arg Thr Arg Leu
367                 372                 377                 382

aat agt tcc cac gag gct ttt gca gcc tcc ttg cgg cag ctg gaa gct      1442
Asn Ser Ser His Glu Ala Phe Ala Ala Ser Leu Arg Gln Leu Glu Ala
383                 388                 393                 398

ggc cac tca ggc cgg tta gag aaa acg gaa gat cta tgg ctg agg gtt      1490
Gly His Ser Gly Arg Leu Glu Lys Thr Glu Asp Leu Trp Leu Arg Val
399                 404                 409                 414

cgg aaa gat cat gct ccc cgc ctg gcc cgc ctt tct ctg gaa agc cgt      1538
Arg Lys Asp His Ala Pro Arg Leu Ala Arg Leu Ser Leu Glu Ser Arg
415                 420                 425                 430

tct tta cag gat gtc ttg ctt cat cgt aaa cct aaa ctg gga cag gaa      1586
Ser Leu Gln Asp Val Leu Leu His Arg Lys Pro Lys Leu Gly Gln Glu
431                 436                 441                 446

ctg ggc cgg ggc cag tat ggt gtg gta tac ctg tgt gac aac tgg gga      1634
Leu Gly Arg Gly Gln Tyr Gly Val Val Tyr Leu Cys Asp Asn Trp Gly
447                 452                 457                 462

gga cac ttc cct tgt gcc ctc aaa tca gtt gtc cct cca gat gag aag      1682
Gly His Phe Pro Cys Ala Leu Lys Ser Val Val Pro Pro Asp Glu Lys
463                 468                 473                 478

cac tgg aat gat ctg gct ttg gaa ttt cac tat atg agg tct ctg ccg      1730
His Trp Asn Asp Leu Ala Leu Glu Phe His Tyr Met Arg Ser Leu Pro
479                 484                 489                 494

aag cat gag cga ttg gtg gat ctc cat ggt tca gtc att gac tac aac      1778
Lys His Glu Arg Leu Val Asp Leu His Gly Ser Val Ile Asp Tyr Asn
495                 500                 505                 510

tat ggt ggt ggc tcc agc att gct gtg ctc ctc att atg gag cgg cta      1826
Tyr Gly Gly Gly Ser Ser Ile Ala Val Leu Leu Ile Met Glu Arg Leu
511                 516                 521                 526

cac cgg gat ctc tac aca ggg ctg aag gct ggg ctg acc ctg gag aca      1874
His Arg Asp Leu Tyr Thr Gly Leu Lys Ala Gly Leu Thr Leu Glu Thr
527                 532                 537                 542
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cgt ttg cag ata gca cta gat gtg gtg gag gga atc cgc ttc ctg cac      1922
Arg Leu Gln Ile Ala Leu Asp Val Val Glu Gly Ile Arg Phe Leu His
543                 548                 553                 558

agc cag gga ctt gtc cat cgt gat atc aaa ctg aaa aat gtg ctg ctg      1970
Ser Gln Gly Leu Val His Arg Asp Ile Lys Leu Lys Asn Val Leu Leu
559                 564                 569                 574

gat aag cag aac cgt gcc aag atc act gac tta gga ttc tgc aag cca      2018
Asp Lys Gln Asn Arg Ala Lys Ile Thr Asp Leu Gly Phe Cys Lys Pro
575                 580                 585                 590

gag gcc atg atg tca ggc agc att gtg ggg aca cca atc cat atg gcc      2066
Glu Ala Met Met Ser Gly Ser Ile Val Gly Thr Pro Ile His Met Ala
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cct gaa ctt ttc aca ggg aag tac gat aat tcc gtg gat gtc tac gct      2114
Pro Glu Leu Phe Thr Gly Lys Tyr Asp Asn Ser Val Asp Val Tyr Ala
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ttt gga att ctt ttc tgg tat atc tgc tca ggc tct gtc aag ctc cct      2162
Phe Gly Ile Leu Phe Trp Tyr Ile Cys Ser Gly Ser Val Lys Leu Pro
623                 628                 633                 638

gag gca ttt gag agg tgt gct agc aaa gac cat ctc tgg aac aat gtg      2210
Glu Ala Phe Glu Arg Cys Ala Ser Lys Asp His Leu Trp Asn Asn Val
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cgg agg ggg gct cgc cca gaa cgt ctt cct gtg ttt gat gag gag tgc      2258
Arg Arg Gly Ala Arg Pro Glu Arg Leu Pro Val Phe Asp Glu Glu Cys
655                 660                 665                 670

tgg cag ttg atg gaa gcc tgt tgg gat ggc gac ccc ttg aag agg cct      2306
Trp Gln Leu Met Glu Ala Cys Trp Asp Gly Asp Pro Leu Lys Arg Pro
671                 676                 681                 686

ctc ttg ggc att gtc cat ccc atg ctc cag ggc atc atg aat cgg ctc      2354
Leu Leu Gly Ile Val His Pro Met Leu Gln Gly Ile Met Asn Arg Leu
687                 692                 697                 702

tgc aag tcc aat tct gag cag cca aac aga gga cta gat gat tct act      2402
Cys Lys Ser Asn Ser Glu Gln Pro Asn Arg Gly Leu Asp Asp Ser Thr
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Leu Ser Arg Trp Pro His Gly Leu Gly Leu Leu Leu Leu Leu Gln Leu
11                  16                  21                  26

ctg ccg ccg tcg acc ctc agc cag gac cgg ctg gac gcg ccg ccg ccg     147
Leu Pro Pro Ser Thr Leu Ser Gln Asp Arg Leu Asp Ala Pro Pro Pro
27                  32                  37                  42

ccc gct gcg ccg ctg ccg cgc tgg tct ggc ccc atc ggg gtg agc tgg     195
Pro Ala Ala Pro Leu Pro Arg Trp Ser Gly Pro Ile Gly Val Ser Trp
43                  48                  53                  58

ggg ctg cgg gcg gcc gca gcc ggg ggc gcg ttt ccc cgc ggc ggc cgt     243
Gly Leu Arg Ala Ala Ala Ala Gly Gly Ala Phe Pro Arg Gly Gly Arg
59                  64                  69                  74
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Trp Arg Arg Ser Ala Pro Gly Glu Asp Glu Glu Cys Gly Arg Val Arg
 75                 80                  85                  90

gac ttc gtc gcc aag ctg gcc aac aac acg cac cag cat gtg ttt gat      339
Asp Phe Val Ala Lys Leu Ala Asn Asn Thr His Gln His Val Phe Asp
 91                 96                 101                 106

gat ctc aga ggc tca gta tcc ttg tcc tgg gtt gga gat agc act ggg      387
Asp Leu Arg Gly Ser Val Ser Leu Ser Trp Val Gly Asp Ser Thr Gly
107                112                 117                 122

gtc att cta gtc ttg act acc ttc cat gta cca ctg gta att atg act      435
Val Ile Leu Val Leu Thr Thr Phe His Val Pro Leu Val Ile Met Thr
123                128                 133                 138

ttt gga cag tcc aag cta tat cga agt gag gat tat ggg aag aac ttt      483
Phe Gly Gln Ser Lys Leu Tyr Arg Ser Glu Asp Tyr Gly Lys Asn Phe
139                144                 149                 154

aag gat att aca gat ctc atc aat aac acc ttt att cgg act gaa ttt      531
Lys Asp Ile Thr Asp Leu Ile Asn Asn Thr Phe Ile Arg Thr Glu Phe
155                160                 165                 170

ggc atg gct att ggt cct gag aac tct gga aag gtg gtg tta aca gca      579
Gly Met Ala Ile Gly Pro Glu Asn Ser Gly Lys Val Val Leu Thr Ala
171                176                 181                 186

gag gtg tct gga gga agt cgt gga gga aga atc ttc aga tca tca gat      627
Glu Val Ser Gly Gly Ser Arg Gly Gly Arg Ile Phe Arg Ser Ser Asp
187                192                 197                 202

ttt gcg aag aat ttt gtg caa aca gat ctc cct ttt cat cct ctc act      675
Phe Ala Lys Asn Phe Val Gln Thr Asp Leu Pro Phe His Pro Leu Thr
203                208                 213                 218

cag atg atg tat agc cct cag aat tct gat tat ctt tta gct ctc agc      723
Gln Met Met Tyr Ser Pro Gln Asn Ser Asp Tyr Leu Leu Ala Leu Ser
219                224                 229                 234

act gaa aat ggc ctg tgg gtg tcc aag aat ttt ggg gga aaa tgg gaa      771
Thr Glu Asn Gly Leu Trp Val Ser Lys Asn Phe Gly Gly Lys Trp Glu
235                240                 245                 250

gaa atc cac aaa gca gta tgt ttg gcc aaa tgg gga tca gac aac acc      819
Glu Ile His Lys Ala Val Cys Leu Ala Lys Trp Gly Ser Asp Asn Thr
251                256                 261                 266

atc ttc ttt aca acc tat gca aat ggc tcc tgc aaa gct gac ctt ggg      867
Ile Phe Phe Thr Thr Tyr Ala Asn Gly Ser Cys Lys Ala Asp Leu Gly
267                272                 277                 282

gct ctg gaa tta tgg aga act tca gac ttg gga aaa agc ttc aaa act      915
Ala Leu Glu Leu Trp Arg Thr Ser Asp Leu Gly Lys Ser Phe Lys Thr
283                288                 293                 298

att ggt gtg aaa atc tac tca ttt ggt ctt ggg gga cgt ttc ctt ttt      963
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Ala Ser Val Met Ala Asp Lys Asp Thr Thr Arg Arg Ile His Val Ser
315                 320                 325                     330

aca gat caa ggg gac aca tgg agc atg gcc cag ctc ccc tcc gtg gga      1059
Thr Asp Gln Gly Asp Thr Trp Ser Met Ala Gln Leu Pro Ser Val Gly
331                 336                 341                     346

cag gaa cag ttc tat tct att ctg gca gca aat gat gac atg gta ttc      1107
Gln Glu Gln Phe Tyr Ser Ile Leu Ala Ala Asn Asp Asp Met Val Phe
347                 352                 357                     362

atg cat gta gat gaa cct gga gac act ggg ttt ggc aca atc ttt acc      1155
Met His Val Asp Glu Pro Gly Asp Thr Gly Phe Gly Thr Ile Phe Thr
363                 368                 373                     378

tca gat gat cga ggc att gtc tat tcc aag tct ttg gac cga cat ctc      1203
Ser Asp Asp Arg Gly Ile Val Tyr Ser Lys Ser Leu Asp Arg His Leu
379                 384                 389                     394

tac act acc aca ggc gga gag acg gac ttt acc aac gtg acc tcc ctc      1251
Tyr Thr Thr Thr Gly Gly Glu Thr Asp Phe Thr Asn Val Thr Ser Leu
395                 400                 405                     410

cgc ggc gtc tac ata aca agc gtg ctc tcc gaa gat aat tct atc cag      1299
Arg Gly Val Tyr Ile Thr Ser Val Leu Ser Glu Asp Asn Ser Ile Gln
411                 416                 421                     426

acc atg atc act ttt gac caa gga gga agg tgg acg cac ctg agg aag      1347
Thr Met Ile Thr Phe Asp Gln Gly Gly Arg Trp Thr His Leu Arg Lys
427                 432                 437                     442

cct gaa aac agt gaa tgt gat gct aca gca aaa aac aag aat gag tgc      1395
Pro Glu Asn Ser Glu Cys Asp Ala Thr Ala Lys Asn Lys Asn Glu Cys
443                 448                 453                     458

agc ctt cat att cat gct tcc tac agc atc tcc cag aaa ctg aat gtt      1443
Ser Leu His Ile His Ala Ser Tyr Ser Ile Ser Gln Lys Leu Asn Val
459                 464                 469                     474

cca atg gcc cca ctc tca gag ccg aat gcc gta ggc att gtc att gct      1491
Pro Met Ala Pro Leu Ser Glu Pro Asn Ala Val Gly Ile Val Ile Ala
475                 480                 485                     490

cat ggt agc gtg ggg gat gcc atc tca gtg atg gtt cca gat gtg tac      1539
His Gly Ser Val Gly Asp Ala Ile Ser Val Met Val Pro Asp Val Tyr
491                 496                 501                     506

atc tca gat gat ggg ggt tac tcc tgg aca aag atg ctg gaa gga ccc      1587
Ile Ser Asp Asp Gly Gly Tyr Ser Trp Thr Lys Met Leu Glu Gly Pro
507                 512                 517                     522

cac tat tac acc atc ctg gat tct gga ggc atc att gtg gcc att gag      1635
His Tyr Tyr Thr Ile Leu Asp Ser Gly Gly Ile Ile Val Ala Ile Glu
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His Ser Ser Arg Pro Ile Asn Val Ile Lys Phe Ser Thr Asp Glu Gly
539                 544                 549                 554

caa tgc tgg caa acc tac acg ttc acc agg gac ccc atc tat ttc act      1731
Gln Cys Trp Gln Thr Tyr Thr Phe Thr Arg Asp Pro Ile Tyr Phe Thr
555                 560                 565                 570

ggc cta gct tca gaa cct gga gct agg tcc atg aat atc agc att tgg      1779
Gly Leu Ala Ser Glu Pro Gly Ala Arg Ser Met Asn Ile Ser Ile Trp
571                 576                 581                 586

ggc ttc aca gaa tct ttc ctg acc agc cag tgg gtc tcc tac acc att      1827
Gly Phe Thr Glu Ser Phe Leu Thr Ser Gln Trp Val Ser Tyr Thr Ile
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gat ttt aaa gat atc ctt gaa agg aac tgt gaa gag aag gac tat acc      1875
Asp Phe Lys Asp Ile Leu Glu Arg Asn Cys Glu Glu Lys Asp Tyr Thr
603                 608                 613                 618

ata tgg ctg gca cac tcc aca gac cct gaa gat tat gaa gat ggc tgc      1923
Ile Trp Leu Ala His Ser Thr Asp Pro Glu Asp Tyr Glu Asp Gly Cys
619                 624                 629                 634

att ttg ggc tac aaa gaa cag ttt ctg cgg cta cgc aag tca tcc gtg      1971
Ile Leu Gly Tyr Lys Glu Gln Phe Leu Arg Leu Arg Lys Ser Ser Val
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tgt cag aat ggt cga gac tat gtt gtg acc aag cag ccc tcc atc tgc      2019
Cys Gln Asn Gly Arg Asp Tyr Val Val Thr Lys Gln Pro Ser Ile Cys
651                 656                 661                 666

ctc tgt tcc ctg gag gac ttt ctc tgt gat ttt ggc tac tac cgt cca      2067
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gaa aat gac tcc aag tgt gtg gaa cag cca gaa ctg aag ggc cac gac      2115
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683                 688                 693                 698

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aag aaa tat gtc tgt ggg gga agg ttc ctg gtg cat cga tac tct gtg      2403
Lys Lys Tyr Val Cys Gly Gly Arg Phe Leu Val His Arg Tyr Ser Val
779                 784                 789                 794

ctg cag cag cat gca gag gcc aat ggt gtg gat ggt gtg gat gct ttg      2451
Leu Gln Gln His Ala Glu Ala Asn Gly Val Asp Gly Val Asp Ala Leu
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Asp Thr Ala Ser His Thr Asn Lys Ser Gly Tyr His Asp Asp Ser Asp
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Met Cys Leu Val Glu Ile Glu Lys Ala Pro Lys Val Val Ala Ala Cys
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Ala Met Pro Val Met Lys Gly Trp Asn Ile Leu Thr Asn Ser Glu Lys
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cca ttg gac tgt cct att tgt gac cag gga ggt gaa tgt gat ctg cag      552
Pro Leu Asp Cys Pro Ile Cys Asp Gln Gly Gly Glu Cys Asp Leu Gln
125                130                 135                 140
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gac cag tcc atg atg ttt gga aat gat agg agc cga ttt tta gag ggg       600
Asp Gln Ser Met Met Phe Gly Asn Asp Arg Ser Arg Phe Leu Glu Gly
141                 146                 151                 156

aag cgt gct gtg gaa gac aag aac att ggg cca ttg gta aag acc atc       648
Lys Arg Ala Val Glu Asp Lys Asn Ile Gly Pro Leu Val Lys Thr Ile
157                 162                 167                 172

atg aca aga tgt ata cag tgt act cgc tgc atc agg ttt gca agt gag       696
Met Thr Arg Cys Ile Gln Cys Thr Arg Cys Ile Arg Phe Ala Ser Glu
173                 178                 183                 188

att gca gga gta gat gat ttg gga aca aca ggc aga gga aat gat atg       744
Ile Ala Gly Val Asp Asp Leu Gly Thr Thr Gly Arg Gly Asn Asp Met
189                 194                 199                 204

caa gtt ggc aca tac att gaa aag atg ttc atg tct gaa ctg tct ggg       792
Gln Val Gly Thr Tyr Ile Glu Lys Met Phe Met Ser Glu Leu Ser Gly
205                 210                 215                 220

aat atc att gat atc tgc cct gta ggt gcc cta acc tct aag ccc tat       840
Asn Ile Ile Asp Ile Cys Pro Val Gly Ala Leu Thr Ser Lys Pro Tyr
221                 226                 231                 236

gcc ttt act gcc cgg cct tgg gaa aca aga aag aca gaa tcc att gat       888
Ala Phe Thr Ala Arg Pro Trp Glu Thr Arg Lys Thr Glu Ser Ile Asp
237                 242                 247                 252

gta atg gat gcg gtt gga agt aat att gtg gtt agc aca aga act gga       936
Val Met Asp Ala Val Gly Ser Asn Ile Val Val Ser Thr Arg Thr Gly
253                 258                 263                 268

gaa gtg atg agg att ttg cca cgt atg cat gag gac atc aat gaa gag       984
Glu Val Met Arg Ile Leu Pro Arg Met His Glu Asp Ile Asn Glu Glu
269                 274                 279                 284

tgg atc tct gat aaa acc aga ttt gcc tat gat ggg cta aaa cgt caa      1032
Trp Ile Ser Asp Lys Thr Arg Phe Ala Tyr Asp Gly Leu Lys Arg Gln
285                 290                 295                 300

aga ctt acc gag cca atg gtc aga aat gaa aaa ggg ctt tta acc tat      1080
Arg Leu Thr Glu Pro Met Val Arg Asn Glu Lys Gly Leu Leu Thr Tyr
301                 306                 311                 316

act tct tgg gag gat gcg ctc tct cgc gta gct gga atg ttg cag agt      1128
Thr Ser Trp Glu Asp Ala Leu Ser Arg Val Ala Gly Met Leu Gln Ser
317                 322                 327                 332

ttt caa ggc aaa gat gtg gca gca att gca ggt ggc ttg gtg gat gct      1176
Phe Gln Gly Lys Asp Val Ala Ala Ile Ala Gly Gly Leu Val Asp Ala
333                 338                 343                 348

gaa gcc ctg gta gct ctc aaa gat ttg ctt aat aga gtg gac tct gac      1224
Glu Ala Leu Val Ala Leu Lys Asp Leu Leu Asn Arg Val Asp Ser Asp
349                 354                 359                 364

acc tta tgc act gaa gag gtc ttc ccc act gca gga gct ggc aca gat      1272
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Thr Leu Cys Thr Glu Glu Val Phe Pro Thr Ala Gly Ala Gly Thr Asp
365                 370                 375                 380

ttg cgt tcc aat tat ctt ctt aat act aca att gct ggt gtg gaa gag       1320
Leu Arg Ser Asn Tyr Leu Leu Asn Thr Thr Ile Ala Gly Val Glu Glu
381                 386                 391                 396

gca gat gtt gtt ctt ctg gtt ggt aca aac cca cgt ttt gag gca cca       1368
Ala Asp Val Val Leu Leu Val Gly Thr Asn Pro Arg Phe Glu Ala Pro
397                 402                 407                 412

ctg ttt aat gct aga att cga aag agc tgg ctg cat aat gac tta aaa       1416
Leu Phe Asn Ala Arg Ile Arg Lys Ser Trp Leu His Asn Asp Leu Lys
413                 418                 423                 428

gtg gcc ctt ata ggc agt cca gtg gac ctc act tac aca tat gac cac       1464
Val Ala Leu Ile Gly Ser Pro Val Asp Leu Thr Tyr Thr Tyr Asp His
429                 434                 439                 444

ctg gga gac tcc ccc aaa att ctt caa gac att gct tcg gga agc cat       1512
Leu Gly Asp Ser Pro Lys Ile Leu Gln Asp Ile Ala Ser Gly Ser His
445                 450                 455                 460

cca ttt agc cag gtc cta aag gaa gct aaa aaa cca atg gtg gtt tta       1560
Pro Phe Ser Gln Val Leu Lys Glu Ala Lys Lys Pro Met Val Val Leu
461                 466                 471                 476

ggc agt tct gca ctc caa aga aat gat gga gca gca att ctt gca gct       1608
Gly Ser Ser Ala Leu Gln Arg Asn Asp Gly Ala Ala Ile Leu Ala Ala
477                 482                 487                 492

gtt tct agc att gca caa aag att cgg atg act agt ggt gtt act ggt       1656
Val Ser Ser Ile Ala Gln Lys Ile Arg Met Thr Ser Gly Val Thr Gly
493                 498                 503                 508

gat tgg aaa gtt atg aat atc ctt cat agg att gca agt caa gta gct       1704
Asp Trp Lys Val Met Asn Ile Leu His Arg Ile Ala Ser Gln Val Ala
509                 514                 519                 524

gct ttg gac ctt ggc tat aag cct ggg gtg gaa gca att cgg aag aac       1752
Ala Leu Asp Leu Gly Tyr Lys Pro Gly Val Glu Ala Ile Arg Lys Asn
525                 530                 535                 540

cct ccc aag gtg ctg ttt ctc ctg gga gca gat gga ggt tgt atc aca       1800
Pro Pro Lys Val Leu Phe Leu Leu Gly Ala Asp Gly Gly Cys Ile Thr
541                 546                 551                 556

cga cag gat ttg cca aag gat tgt ttc att att tat caa gga cat cat       1848
Arg Gln Asp Leu Pro Lys Asp Cys Phe Ile Ile Tyr Gln Gly His His
557                 562                 567                 572

ggt gat gtt ggg gct ccc ata gct gat gtt att ctc cca gga gct gct       1896
Gly Asp Val Gly Ala Pro Ile Ala Asp Val Ile Leu Pro Gly Ala Ala
573                 578                 583                 588

tac aca gag aag tct gct aca tat gtc aac act gag ggt aga gct cag       1944
Tyr Thr Glu Lys Ser Ala Thr Tyr Val Asn Thr Glu Gly Arg Ala Gln
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589                 594                 599                 604

cag act aag gta gca gtg aca cct cct ggc ttg gca aga gaa gac tgg      1992
Gln Thr Lys Val Ala Val Thr Pro Pro Gly Leu Ala Arg Glu Asp Trp
605                 610                 615                 620

aaa att ata aga gca ctc tct gag att gct gga atg act ctt cca tat      2040
Lys Ile Ile Arg Ala Leu Ser Glu Ile Ala Gly Met Thr Leu Pro Tyr
621                 626                 631                 636

gat act ctg gat caa gta agg aac aga ttg gaa gaa ttc tct cct aat      2088
Asp Thr Leu Asp Gln Val Arg Asn Arg Leu Glu Glu Phe Ser Pro Asn
637                 642                 647                 652

ctt gtt cga tat gat gat att gaa ggg gct aat tac ttc cag caa gca      2136
Leu Val Arg Tyr Asp Asp Ile Glu Gly Ala Asn Tyr Phe Gln Gln Ala
653                 658                 663                 668

aat gag ctc tca aag cta gtg aac cag cag ctt ctt gct gac cca ctt      2184
Asn Glu Leu Ser Lys Leu Val Asn Gln Gln Leu Leu Ala Asp Pro Leu
669                 674                 679                 684

gtt cca cct cag cta act cta aaa gac ttc tac atg aca gat tcg att      2232
Val Pro Pro Gln Leu Thr Leu Lys Asp Phe Tyr Met Thr Asp Ser Ile
685                 690                 695                 700

agc aga gcc tca cag aca atg gcc aaa tgt gtc aaa gct gtc aca gag      2280
Ser Arg Ala Ser Gln Thr Met Ala Lys Cys Val Lys Ala Val Thr Glu
701                 706                 711                 716

ggt gcc cag gca gta gag gaa cca tcc ata tgc tga agct tctactagga      2330
Gly Ala Gln Ala Val Glu Glu Pro Ser Ile Cys  *
717                 722                 727

tcccagtttt gccgcagata attaatggac aactgtagtg cagtgatcct ttacaggttt    2390

atttctttgt aaaaaaaaaa taataataat ttgaatcatg taatatttaa ggttatacta    2450

tgcctatttg aaaatgatat tagttatcaa ctttgcagtt tgaaaaacat gtattgtgtg    2510

taaaggttaa ataacaaaac tatgcagatg ctcttaaaag cattgataac ctttgtgacg    2570

aacataaaga gatccttaaa tt                                             2592


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ccctgctgtg tgccttgtgc catgctgctc tgttagggga ctggggaggc caggacatgc     180

tgccagggag ctcccggctc agtgggaaag agtaaatgca gagtgctttg ctactggttt     240

aaaagaaagg aacacaaata tgattgcttt cttactctgg gtttgccttt ctggcatgtt     300

gcctggttcc caagacgaag tctcggatgt gtacatattt gagagttcag tactgcagta     360

tctattcagt gaagtataaa cgaaagagca tttttcaaaa caa atg gta tgt aat       415
                                                Met Val Cys Asn
                                                 1

att ttt gtc ttc ttt agg gct ctg gaa ctt cat cca ttc tct atg aaa       463
Ile Phe Val Phe Phe Arg Ala Leu Glu Leu His Pro Phe Ser Met Lys
  5                 10                  15                  20

cct ctt ctg agg cgg gcg atg gcc tat gaa act cta gag cag tat ggg       511
Pro Leu Leu Arg Arg Ala Met Ala Tyr Glu Thr Leu Glu Gln Tyr Gly
 21                 26                  31                  36

aaa gct tat gtg gat tat aaa aca gtg ttg cag ata gac tgt gga ctc       559
Lys Ala Tyr Val Asp Tyr Lys Thr Val Leu Gln Ile Asp Cys Gly Leu
 37                 42                  47                  52

cag cta gca aat gac agt gtt aac agg cta tca aga att tta atg gag       607
Gln Leu Ala Asn Asp Ser Val Asn Arg Leu Ser Arg Ile Leu Met Glu
 53                 58                  63                  68

ctg gat gga cca aat tgg cgg gag aag ctg tca ctt att cct gct gtg       655
Leu Asp Gly Pro Asn Trp Arg Glu Lys Leu Ser Leu Ile Pro Ala Val
 69                 74                  79                  84

cct gct tct gtg cca ctg caa gct tgg cat ccg gca aaa gag atg atc       703
Pro Ala Ser Val Pro Leu Gln Ala Trp His Pro Ala Lys Glu Met Ile
 85                 90                  95                 100

tca aaa caa gca gga gac tcc agc agc cat cgc cag cag ggc atc aca       751
Ser Lys Gln Ala Gly Asp Ser Ser Ser His Arg Gln Gln Gly Ile Thr
101                106                 111                 116

gat gaa aaa aca ttt aaa gcc ctt aag gaa gaa gga aat caa tgt gta       799
Asp Glu Lys Thr Phe Lys Ala Leu Lys Glu Glu Gly Asn Gln Cys Val
117                122                 127                 132

aat gac aaa aac tat aaa gac gcc ctc agt aaa tac agc gaa tgc tta       847
Asn Asp Lys Asn Tyr Lys Asp Ala Leu Ser Lys Tyr Ser Glu Cys Leu
133                138                 143                 148

aag att aac aat aag gaa tgt gcc ata tat aca aac aga gct ctc tgt       895
Lys Ile Asn Asn Lys Glu Cys Ala Ile Tyr Thr Asn Arg Ala Leu Cys
149                154                 159                 164

tac ttg aag ctg tgc cag ttt gaa gaa gca aag cag gac tgt gat cag       943
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Tyr Leu Lys Leu Cys Gln Phe Glu Glu Ala Lys Gln Asp Cys Asp Gln
165                 170                 175                 180

gca ctt cag cta gct gat ggg aac gtg aaa gcc ttc tat aga cga gct      991
Ala Leu Gln Leu Ala Asp Gly Asn Val Lys Ala Phe Tyr Arg Arg Ala
181                 186                 191                 196

ctg gct cat aaa gga ctc aag aat tat cag aaa agc tta att gat ctc     1039
Leu Ala His Lys Gly Leu Lys Asn Tyr Gln Lys Ser Leu Ile Asp Leu
197                 202                 207                 212

aat aaa gtt atc cta cta gat cca agt att att gag gca aag atg gaa     1087
Asn Lys Val Ile Leu Leu Asp Pro Ser Ile Ile Glu Ala Lys Met Glu
213                 218                 223                 228

ctg gaa gag gta act aga ctc ctt aat ctt aag gat aag aca gca cca     1135
Leu Glu Glu Val Thr Arg Leu Leu Asn Leu Lys Asp Lys Thr Ala Pro
229                 234                 239                 244

ttc aac aaa gaa aag gag aga agg aaa att gag att caa gag gtg aat     1183
Phe Asn Lys Glu Lys Glu Arg Arg Lys Ile Glu Ile Gln Glu Val Asn
245                 250                 255                 260

gaa ggc aag gag gag cct gga aga cct gca ggg gag gtc tcc acg gga     1231
Glu Gly Lys Glu Glu Pro Gly Arg Pro Ala Gly Glu Val Ser Thr Gly
261                 266                 271                 276

tgc ctt gct tct gag aag gga ggc aaa agc agc agg tca cca gaa gac     1279
Cys Leu Ala Ser Glu Lys Gly Gly Lys Ser Ser Arg Ser Pro Glu Asp
277                 282                 287                 292

cct gag aaa ctt ccg ata gcc aag cct att aat gcc tat gaa ttt ggt     1327
Pro Glu Lys Leu Pro Ile Ala Lys Pro Ile Asn Ala Tyr Glu Phe Gly
293                 298                 303                 308

cag att ata aat gct ctc agt acc agg aag gat aaa gaa gcc tgt gca     1375
Gln Ile Ile Asn Ala Leu Ser Thr Arg Lys Asp Lys Glu Ala Cys Ala
309                 314                 319                 324

cat ctt tta gcc atc act gca cca aaa gat ttg ccg atg ttt tta agt     1423
His Leu Leu Ala Ile Thr Ala Pro Lys Asp Leu Pro Met Phe Leu Ser
325                 330                 335                 340

aac aaa ctt gaa ggg gat aca ttc ctt ctc ctc att cag tct ctg aaa     1471
Asn Lys Leu Glu Gly Asp Thr Phe Leu Leu Leu Ile Gln Ser Leu Lys
341                 346                 351                 356

aat aat ctt att gaa aaa gat ccc tca ttg gtg tat cag cat ctt tta     1519
Asn Asn Leu Ile Glu Lys Asp Pro Ser Leu Val Tyr Gln His Leu Leu
357                 362                 367                 372

tac ctg agt aaa gca gaa agg ttt aag atg atg ttg aca cta att agc     1567
Tyr Leu Ser Lys Ala Glu Arg Phe Lys Met Met Leu Thr Leu Ile Ser
373                 378                 383                 388

aag ggc caa aag gag cta att gaa cag ctg ttt gag gac ctt tcg gac     1615
Lys Gly Gln Lys Glu Leu Ile Glu Gln Leu Phe Glu Asp Leu Ser Asp
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10034240 . 010402

389   394   399   404

aca cca aac aac cat ttt act tta gaa gat ata cag gcc cta aaa agg   1663
Thr Pro Asn Asn His Phe Thr Leu Glu Asp Ile Gln Ala Leu Lys Arg
405   410   415   420

cag tat gag ctt taa atcaagataa ttgttagatt tcttccatgc atgtatgtgt   1718
Gln Tyr Glu Leu *
421

tccaggaatg ttaatgagat ggtattgtaa aagagttgca tggataaaac ttggcctaga   1778

aaagtttggt ctgcactata aaacatttta cttattttcc tacatagaac atgtatattc   1838

tacaatctgc tttttattag ttgtaaatat tttcttatgt accagaacca aataagtata   1898

tttagaactt gttaaaaata cattttaatt tatgatatac atattatttt aattacttgt   1958

taaaattttg agttaagttg catttctttg ggctatgaag gagtcctctt aagtttgata   2018

gaaatgaatt tcttgtaaca ttctttttta aaagtggaag tcattaacag tgattattat   2078

atcacttata tcctgctaag atacacataa atcccatttt gtactagtac ctgtggatta   2138

cagtcagtta aaatgaaatg caacactgaa gtctataaca tgaaatgatt attaaattgt   2198

ttattaattt agagctataa gaggaactta tttttctaa tacggaagca ttgcctaata   2258

attaagaaca aaaattgcca aaaatttcta ccacttttta ctagatttta aaaagctact   2318

ttcttttata ttgcctatat aagcaaaaaa ccaaccactg tattaaagca aactaagcct   2378

gcatttatat ctgaattatt acctccatat tttaccaaac atttgaatgt ccccccttccc   2438

cctttttgt tttctgcttt tatgactgta tttattcctt tactgtaaaa gaatatgaag   2498

aactcataca tgttgaaagc tcctttgttg actgggtcaa agtgaaggaa tttcaatctc   2558

caaaaaaaaa aaa   2571

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actggatagc agttttaagt ggcgttcacc tagtcaacac gaccgcgtgt gttgcccctg     180

ccctgggctc cccgccatga catcttcact ttgcagcttg tgctgagact gacccaagtg     240

cagctagcac tgggacacag atccttgtct tcagcacctt ccaaggagcc aacttttatt     300

ccctttcctc tctcccctcc ccacctcgct tcttcccaat ttagtaactt agatgcttcc     360

agcacatacg taggtagcta ccccagccgg tttggattac aggcctgtgc tggaacatca     420

tctcagttgg ccaccttcct ggcaggctgt agacctgaca ttttgagaca agcctagagt     480

caggagcagg gactttgact cttaggaaga gcacacatga gggcaaggct gctggcagac     540

gtctccattg tccttatgtt gtctgtgttg tatttttttt tttttattga ccatggtgat     600

tatttttttta aaccatcgtt aatatactga agtgagctat agcacatatc atgtgcttag    660

tttgtttatt tttctccatc tccccttggc ttcctagagt ttggacatat tccaggctaa     720

atgcttttac tcaagactac agaaaggttt gaagtagtgt gtgc atg gca tgc acg      776
                                                 Met Ala Cys Thr
                                                 1

tat gta agt aat ctg ggg aag aag caa aga tct gtt tca ttc tta gcc       824
Tyr Val Ser Asn Leu Gly Lys Lys Gln Arg Ser Val Ser Phe Leu Ala
  5                  10                  15                  20

tca ggc ctc atg agg gtc tcc aca ggg ccg gag ctc agg tta cac cac       872
Ser Gly Leu Met Arg Val Ser Thr Gly Pro Glu Leu Arg Leu His His
 21                  26                  31                  36

tcc ttc gtc ctt aca gga gat gta ggg aga aga atc tgc agg ctg ctt       920
Ser Phe Val Leu Thr Gly Asp Val Gly Arg Arg Ile Cys Arg Leu Leu
 37                  42                  47                  52

gta gga ctg ttc acc aag ggg gat acc agc agc aag aga gtg cac ccg       968
Val Gly Leu Phe Thr Lys Gly Asp Thr Ser Ser Lys Arg Val His Pro
 53                  58                  63                  68

ttt agc cct gga ccc tgt ttc tta ctg tgt gac ttg gct aga gtt ggg      1016
Phe Ser Pro Gly Pro Cys Phe Leu Leu Cys Asp Leu Ala Arg Val Gly
 69                  74                  79                  84

agt tcc ccc aaa ata aac gtg tcc cca ttt tac cag aac caa acc tca      1064
Ser Ser Pro Lys Ile Asn Val Ser Pro Phe Tyr Gln Asn Gln Thr Ser
 85                  90                  95                 100

aca cag cga agc tgt act gtc ttt gtg tgg caa aga tgt tcc ctt gta      1112
Thr Gln Arg Ser Cys Thr Val Phe Val Trp Gln Arg Cys Ser Leu Val
101                 106                 111                 116
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ggc ccc ttt cag gta acc gtc ttc aca atg tat ttt cat cac agt tta      1160
Gly Pro Phe Gln Val Thr Val Phe Thr Met Tyr Phe His His Ser Leu
117                 122                 127                 132

agg agc atc agc cgc ttc tca agt ggg tag g gaaagcagaa aaacgtacgc      1211
Arg Ser Ile Ser Arg Phe Ser Ser Gly  *
133                 138

aagaggacat ggatccaaaa tgatgatgaa gcatctccca tggggaggtg atggtgggga    1271

gatgatgggc taaacaggca acttttcaaa aacacagcta tcatagaaaa gaaacttgcc    1331

tcatgtaaac tggattgaga aattctcagt gattctgcaa tggatttttt tttaatgcag    1391

aagtaatgta tactctagta ttctggtgtt tttatattta tgtaataatt tcttaaaacc    1451

attcagacag ataactattt aatttttttt aagaaagttg gaaaggtctc tcctcccaag    1511

gacagtggct ggaagagttg gggcacagcc agttctgaat gttggtggag ggtgtagtgg    1571

ctttttggct cagcatccag aaacaccaaa ccaggctggc taaacaagtg gccgcgtgta    1631

aaaacagaca gctctgagtc aaatctgggc ccttccacaa gggtcctctg aaccaagccc    1691

cactcccttg ctaggggtga aagcattaca gagagatgga gccatctatc caagaagcct    1751

tcactcacct tcactgctgc tgttgcaact cggctgttct ggactctgat gtgtgtggag    1811

ggatggggaa tagaacattg actgtgttga ttaccttcac tattcggcca gcctgacctt    1871

ttaataactt tgtaaaaagc atgtatgtat ttatagtgtt ttagattttt ctaactttta    1931

tatcttaaaa gcagagcacc tgtttaagca ttgtacccct attgttaaag atttgtgtcc    1991

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ggcgtgagtg agcgcggaga cagtggccgc cggcggccca acccgtctat cccttcggcc     180
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gccgccggc    atg agc cac atc cag atc ccg ccg ggg ctc acg gag ctg      228
             Met Ser His Ile Gln Ile Pro Pro Gly Leu Thr Glu Leu
              1               5                  10

ctg cag ggc tac acg gtg gag gtg ctg cga cag cag ccg cct gac ctc       276
Leu Gln Gly Tyr Thr Val Glu Val Leu Arg Gln Gln Pro Pro Asp Leu
 14                 19                  24                  29

gtc gaa ttc gca gtg gag tac ttc acc cgc ctg cgc gag gcc cgc gcc       324
Val Glu Phe Ala Val Glu Tyr Phe Thr Arg Leu Arg Glu Ala Arg Ala
 30                 35                  40                  45

cca gcc tca gtc ctg ccc gcc gcc acc cca cgc cag agc ctg ggc cac       372
Pro Ala Ser Val Leu Pro Ala Ala Thr Pro Arg Gln Ser Leu Gly His
 46                 51                  56                  61

ccc ccg cca gaa ccc ggc ccg gac cgt gtc gcc gac gcc aaa ggg gac       420
Pro Pro Pro Glu Pro Gly Pro Asp Arg Val Ala Asp Ala Lys Gly Asp
 62                 67                  72                  77

agc gag tcg gag gag gac gag gac ttg gaa gtt cca gtt cct agc aga       468
Ser Glu Ser Glu Glu Asp Glu Asp Leu Glu Val Pro Val Pro Ser Arg
 78                 83                  88                  93

ttt aat aga cga gta tca gtc tgt gct gag acc tat aac cct gat gag       516
Phe Asn Arg Arg Val Ser Val Cys Ala Glu Thr Tyr Asn Pro Asp Glu
 94                 99                 104                 109

gaa gag gaa gat aca gat cca agg gtg att cat cct aaa act gat gaa       564
Glu Glu Glu Asp Thr Asp Pro Arg Val Ile His Pro Lys Thr Asp Glu
110                115                 120                 125

cag aga tgc aga ctt cag gaa gct tgc aaa gat att ctc ctt ttc aaa       612
Gln Arg Cys Arg Leu Gln Glu Ala Cys Lys Asp Ile Leu Leu Phe Lys
126                131                 136                 141

aat ctt gat cag gaa cag ctt tct caa gtt ctc gat gcc atg ttt gaa       660
Asn Leu Asp Gln Glu Gln Leu Ser Gln Val Leu Asp Ala Met Phe Glu
142                147                 152                 157

agg ata gtc aaa gct gat gag cat gtc att gac caa gga gat gat gga       708
Arg Ile Val Lys Ala Asp Glu His Val Ile Asp Gln Gly Asp Asp Gly
158                163                 168                 173

gac aac ttt tat gtc ata gaa cgg gga act tat gac att tta gta aca       756
Asp Asn Phe Tyr Val Ile Glu Arg Gly Thr Tyr Asp Ile Leu Val Thr
174                179                 184                 189

aaa gat aat caa acc cgc tct gtt ggt caa tat gac aac cgt ggc agt       804
Lys Asp Asn Gln Thr Arg Ser Val Gly Gln Tyr Asp Asn Arg Gly Ser
190                195                 200                 205

ttt gga gaa cta gct ctg atg tac aac acc ccg aga gct gct acc att       852
Phe Gly Glu Leu Ala Leu Met Tyr Asn Thr Pro Arg Ala Ala Thr Ile
206                211                 216                 221

gtt gct acc tca gaa ggc tcc ctt tgg gga ctg gac cgg gtg act ttt       900
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Val Ala Thr Ser Glu Gly Ser Leu Trp Gly Leu Asp Arg Val Thr Phe
222                 227                 232                 237

aga aga atc ata gtg aaa aat aat gca aag aag agg aag atg ttt gaa       948
Arg Arg Ile Ile Val Lys Asn Asn Ala Lys Lys Arg Lys Met Phe Glu
238                 243                 248                 253

tca ttt att gag tct gtg ccc ctc ctt aaa tca cta gag gtg tca gaa       996
Ser Phe Ile Glu Ser Val Pro Leu Leu Lys Ser Leu Glu Val Ser Glu
254                 259                 264                 269

cga atg aag att gtg gat gta ata gga gag aag atc tat aag gat gga      1044
Arg Met Lys Ile Val Asp Val Ile Gly Glu Lys Ile Tyr Lys Asp Gly
270                 275                 280                 285

gaa cgc ata atc act cag ggt gaa aag gct gat agc ttt tac atc ata      1092
Glu Arg Ile Ile Thr Gln Gly Glu Lys Ala Asp Ser Phe Tyr Ile Ile
286                 291                 296                 301

gag tct ggc gaa gtg agc atc ttg att aga agc agg act aaa tca aac      1140
Glu Ser Gly Glu Val Ser Ile Leu Ile Arg Ser Arg Thr Lys Ser Asn
302                 307                 312                 317

aag gat ggt ggg aac cag gag gtc gag att gcc cgc tgc cat aag ggg      1188
Lys Asp Gly Gly Asn Gln Glu Val Glu Ile Ala Arg Cys His Lys Gly
318                 323                 328                 333

cag tac ttt gga gag ctt gcc ctg gtc acc aac aaa ccc aga gct gcc      1236
Gln Tyr Phe Gly Glu Leu Ala Leu Val Thr Asn Lys Pro Arg Ala Ala
334                 339                 344                 349

tca gct tat gca gtt gga gat gtc aaa tgc tta gtt atg gat gta caa      1284
Ser Ala Tyr Ala Val Gly Asp Val Lys Cys Leu Val Met Asp Val Gln
350                 355                 360                 365

gca ttc gag agg ctt ctg ggg ccc tgc atg gac atc atg aag agg aac      1332
Ala Phe Glu Arg Leu Leu Gly Pro Cys Met Asp Ile Met Lys Arg Asn
366                 371                 376                 381

atc tca cac tat gag gaa cag ctg gtg aag atg ttt ggc tcc agc gtg      1380
Ile Ser His Tyr Glu Glu Gln Leu Val Lys Met Phe Gly Ser Ser Val
382                 387                 392                 397

gat ctg ggc aac ctc ggg cag tag gtgtgccaca ccccagagcc ttcttagtgt     1434
Asp Leu Gly Asn Leu Gly Gln  *
398                 403

gacaccaaaa ccttctggtc agccacagaa cacatacaga aaacagacat gacagaactg    1494

ttcctgccgt tgccgccact gctgccattg ctgtggttat gggcatttag aaaacttgaa    1554

agtcagcact aaaggatggg cagaggttca acccacacct ccactttgct tctgaaggcc    1614

cattcattag accacttgta aagattactc caacccagtt tttatatctt tggttcaaaa    1674

cggcatgtct ctccaacaat ttaagtgcct gatacaaagt ccaaagtata aacatgctcc    1734
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tgcctcagca agtgaagagg aggaagaaga ggaggaggag gaggatgaag atgaagagga     180

ggaagtggca gcttggaggc tgcccccaag atggagtcag ctgggaacct cccagcggcc     240

ccgcccttcc cgccccactc atcgaaaaac ctgctcacag cgccgccgcc gagccatgag     300

agccttccgg atgctgctct actcaaaaag cacctcgctg acattccact ggaagctttg     360

ggggcgccac cggggccggc ggcggggcct cgcacacccc aagaaccatc tttcacccca     420

gcaagggggt gcgacgccac aggtgccatc cccctgttgt cgttttgact ccccccgggg     480

gccacctcca ccccggctgg gtctgctagg tgctctc atg gct gag gat ggg gtg      535
                                         Met Ala Glu Asp Gly Val
                                           1

aga ggg tct cca cca gtg ccc tct ggg ccc ccc atg gag gaa gat gga       583
Arg Gly Ser Pro Pro Val Pro Ser Gly Pro Pro Met Glu Glu Asp Gly
  7                  12                  17                  22

ctc agg tgg act cca aag tct cct ctg gac cct gac tcg ggc ctc ctt       631
Leu Arg Trp Thr Pro Lys Ser Pro Leu Asp Pro Asp Ser Gly Leu Leu
 23                  28                  33                  38

tca tgt act ctg ccc aac ggt ttt ggg gga caa tct ggg cca gaa ggg       679
Ser Cys Thr Leu Pro Asn Gly Phe Gly Gly Gln Ser Gly Pro Glu Gly
 39                  44                  49                  54

gag cgc agc ttg gca ccc cct gat gcc agc atc ctc atc agc aat gtg       727
Glu Arg Ser Leu Ala Pro Pro Asp Ala Ser Ile Leu Ile Ser Asn Val
 55                  60                  65                  70

tgc agc atc ggg gac cat gtg gcc cag gag ctt ttt cag ggc tca gat       775
Cys Ser Ile Gly Asp His Val Ala Gln Glu Leu Phe Gln Gly Ser Asp
 71                  76                  81                  86

ttg ggc atg gca gaa gag gca gag agg cct ggg gag aaa gcc ggc cag       823
Leu Gly Met Ala Glu Glu Ala Glu Arg Pro Gly Glu Lys Ala Gly Gln
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 87              92              97              102

cac agc ccc ctg cga gag gag cat gtg acc tgc gta cag agc atc ttg      871
His Ser Pro Leu Arg Glu Glu His Val Thr Cys Val Gln Ser Ile Leu
103                 108                 113                 118

gac gaa ttc ctt caa acg tat ggc agc ctc ata ccc ctc agc act gat      919
Asp Glu Phe Leu Gln Thr Tyr Gly Ser Leu Ile Pro Leu Ser Thr Asp
119                 124                 129                 134

gag gta gta gag aag ctg gag gac att ttc cag cag gag ttt tcc acc      967
Glu Val Val Glu Lys Leu Glu Asp Ile Phe Gln Gln Glu Phe Ser Thr
135                 140                 145                 150

cct tcc agg aag ggc ctg gtg ttg cag ctg atc cag tct tac cag cgg     1015
Pro Ser Arg Lys Gly Leu Val Leu Gln Leu Ile Gln Ser Tyr Gln Arg
151                 156                 161                 166

atg cca ggc aat gcc atg gtg agg ggc ttc cga gtg gct tat aag cgg     1063
Met Pro Gly Asn Ala Met Val Arg Gly Phe Arg Val Ala Tyr Lys Arg
167                 172                 177                 182

cac gtg ctg acc atg gat gac ttg ggg acc ttg tat gga cag aac tgg     1111
His Val Leu Thr Met Asp Asp Leu Gly Thr Leu Tyr Gly Gln Asn Trp
183                 188                 193                 198

ctc aat gac cag gtg atg aac atg tat gga gac ctg gtc atg gac aca     1159
Leu Asn Asp Gln Val Met Asn Met Tyr Gly Asp Leu Val Met Asp Thr
199                 204                 209                 214

gtc cct gaa aag gtg cat ttc ttc aat agt ttc ttc tat gat aaa ctc     1207
Val Pro Glu Lys Val His Phe Phe Asn Ser Phe Phe Tyr Asp Lys Leu
215                 220                 225                 230

cgt acc aag ggt tat gat ggg gtg aaa agg tgg acc aaa aac gtg gac     1255
Arg Thr Lys Gly Tyr Asp Gly Val Lys Arg Trp Thr Lys Asn Val Asp
231                 236                 241                 246

atc ttc aat aag gag cta ctg cta atc ccc atc cac ctg gag gtg cat     1303
Ile Phe Asn Lys Glu Leu Leu Leu Ile Pro Ile His Leu Glu Val His
247                 252                 257                 262

tgg tcc ctc atc tct gtt gat gtg agg cga cgc acc atc acc tat ttt     1351
Trp Ser Leu Ile Ser Val Asp Val Arg Arg Arg Thr Ile Thr Tyr Phe
263                 268                 273                 278

gac tcg cag cgt acc cta aac cgc cgc tgc cct aag cat att gcc aag     1399
Asp Ser Gln Arg Thr Leu Asn Arg Arg Cys Pro Lys His Ile Ala Lys
279                 284                 289                 294

tat cta cag gca gag gcg gta aag aaa gac cga ctg gat ttc cac cag     1447
Tyr Leu Gln Ala Glu Ala Val Lys Lys Asp Arg Leu Asp Phe His Gln
295                 300                 305                 310

ggc tgg aaa ggt tac ttc aaa atg aat gtg gcc agg cag aat aat gac     1495
Gly Trp Lys Gly Tyr Phe Lys Met Asn Val Ala Arg Gln Asn Asn Asp
311                 316                 321                 326
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agt gac tgt ggt gct ttt gtg ttg cag tac tgc aag cat ctg gcc ctg      1543
Ser Asp Cys Gly Ala Phe Val Leu Gln Tyr Cys Lys His Leu Ala Leu
327                 332                 337                 342

tct cag cca ttc agc ttc acc cag cag gac atg ccc aaa ctt cgt cgg      1591
Ser Gln Pro Phe Ser Phe Thr Gln Gln Asp Met Pro Lys Leu Arg Arg
343                 348                 353                 358

cag atc tac aag gag ctg tgt cac tgc aaa ctc act gtg tga gcctcgt      1640
Gln Ile Tyr Lys Glu Leu Cys His Cys Lys Leu Thr Val  *
359                 364                 369

accccagacc ccaagcccat aaatgggaag ggagacatgg gagtcccttc ccaagaaact    1700

ccagttcctt tcctctcttg cctcttccca ctcacttccc tttggttttt catatttaaa    1760

tgtttcaatt tctgtatttt tttttctttg agagaatact tgttgatttc tgatgtgcag    1820

ggggtggcta cagaaaagcc cctttcttcc tctgtttgca ggggagtgtg gccctgtggc    1880

ctgggtggag cagtcatcct ccccccttccc cgtgcaggga gcaggaaatc agtgctgggg   1940

gtggtgggcg gacaatagga tcactgcctg ccagatcttc aaacttttat atatatatat    2000

atatatatat atatatatat aaaaatatat aaatgccacg gtcctgctct ggtcaataaa    2060

ggatcctttg ttgatacgta                                                2080



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      <211>  2029
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      <213>  Homo sapiens

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      <222>  (518)..(1582)

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ggaagtggca gcttggaggc tgcccccaag atggagtcag ctgggaacct cccagcggcc    240

ccgcccttcc cgccccactc atcgaaaaac ctgctcacag cgccgccgcc gagccatgag    300

agccttccgg atgctgctct actcaaaaag cacctcgctg acattccact ggaagctttg    360

ggggcgccac cggggccggc ggcggggcct cgcacacccc aagaaccatc tttcacccca    420

gcaagggggt gcgacgccac aggtgccatc cccctgttgt cgttttgact ccccccgggg    480
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gccacctcca ccccggctgg gtctgctagg tgctctc atg gct gag gat ggg gtg     535
                                         Met Ala Glu Asp Gly Val
                                          1

aga ggg tct cca cca gtg ccc tct ggg ccc ccc atg gag gaa gat gga      583
Arg Gly Ser Pro Pro Val Pro Ser Gly Pro Pro Met Glu Glu Asp Gly
 7                  12                  17                  22

ctc agg tgg act cca aag tct cct ctg gac cct gac tcg ggc ctc ctt      631
Leu Arg Trp Thr Pro Lys Ser Pro Leu Asp Pro Asp Ser Gly Leu Leu
 23                 28                  33                  38

tca tgt act ctg ccc aac ggt ttt ggg gga caa tct ggg cca gaa ggg      679
Ser Cys Thr Leu Pro Asn Gly Phe Gly Gly Gln Ser Gly Pro Glu Gly
 39                 44                  49                  54

gag cgc agc ttg gca ccc cct gat gcc agc atc ctc atc agc aat gtg      727
Glu Arg Ser Leu Ala Pro Pro Asp Ala Ser Ile Leu Ile Ser Asn Val
 55                 60                  65                  70

tgc agc atc ggg gac cat gtg gcc cag gag ctt ttt cag ggc tca gat      775
Cys Ser Ile Gly Asp His Val Ala Gln Glu Leu Phe Gln Gly Ser Asp
 71                 76                  81                  86

ttg ggc atg gca gaa gag gca gag agg cct ggg gag aaa gcc ggc cag      823
Leu Gly Met Ala Glu Glu Ala Glu Arg Pro Gly Glu Lys Ala Gly Gln
 87                 92                  97                 102

cac agc ccc ctg cga gag gag cat gtg acc tgc gta cag agc atc ttg      871
His Ser Pro Leu Arg Glu Glu His Val Thr Cys Val Gln Ser Ile Leu
103                 108                 113                 118

gac gaa ttc ctt caa acg tat ggc agc ctc ata ccc ctc agc act gat      919
Asp Glu Phe Leu Gln Thr Tyr Gly Ser Leu Ile Pro Leu Ser Thr Asp
119                 124                 129                 134

gag gta gta gag aag ctg gag gac att ttc cag cag gag ttt tcc acc      967
Glu Val Val Glu Lys Leu Glu Asp Ile Phe Gln Gln Glu Phe Ser Thr
135                 140                 145                 150

cct tcc agg aag ggc ctg gtg ttg cag ctg atc cag tct tac cag cgg     1015
Pro Ser Arg Lys Gly Leu Val Leu Gln Leu Ile Gln Ser Tyr Gln Arg
151                 156                 161                 166

atg cca ggc aat gcc atg gtg agg ggc ttc cga gtg gct tat aag cgg     1063
Met Pro Gly Asn Ala Met Val Arg Gly Phe Arg Val Ala Tyr Lys Arg
167                 172                 177                 182

cac gtg ctg acc atg gat gac ttg ggg acc ttg tat gga cag aac tgg     1111
His Val Leu Thr Met Asp Asp Leu Gly Thr Leu Tyr Gly Gln Asn Trp
183                 188                 193                 198

ctc aat gac cag gtg atg aac atg tat gga gac ctg gtc atg gac aca     1159
Leu Asn Asp Gln Val Met Asn Met Tyr Gly Asp Leu Val Met Asp Thr
199                 204                 209                 214
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gtc cct gaa aag gtg cat ttc ttc aat agt ttc ttc tat gat aaa ctc      1207
Val Pro Glu Lys Val His Phe Phe Asn Ser Phe Phe Tyr Asp Lys Leu
215                 220                 225                 230

cgt acc aag ggt tat gat ggg gtg aaa agg tgg acc aaa aac gtg gac      1255
Arg Thr Lys Gly Tyr Asp Gly Val Lys Arg Trp Thr Lys Asn Val Asp
231                 236                 241                 246

atc ttc aat aag gag cta ctg cta atc ccc atc cac ctg gag gtg cat      1303
Ile Phe Asn Lys Glu Leu Leu Leu Ile Pro Ile His Leu Glu Val His
247                 252                 257                 262

tgg tcc ctc atc tct gtt gat gtg agg cga cgc acc atc acc tat ttt      1351
Trp Ser Leu Ile Ser Val Asp Val Arg Arg Arg Thr Ile Thr Tyr Phe
263                 268                 273                 278

gac tcg cag cgt acc cta aac cgc cgc tgc cct aag cat att gcc aag      1399
Asp Ser Gln Arg Thr Leu Asn Arg Arg Cys Pro Lys His Ile Ala Lys
279                 284                 289                 294

tat cta cag gca gag gcg gta aag aaa gac cga ctg gat ttc cac cag      1447
Tyr Leu Gln Ala Glu Ala Val Lys Lys Asp Arg Leu Asp Phe His Gln
295                 300                 305                 310

ggc tgg aaa ggt tac ttc aaa atg tac tgc aag cat ctg gcc ctg tct      1495
Gly Trp Lys Gly Tyr Phe Lys Met Tyr Cys Lys His Leu Ala Leu Ser
311                 316                 321                 326

cag cca ttc agc ttc acc cag cag gac atg ccc aaa ctt cgt cgg cag      1543
Gln Pro Phe Ser Phe Thr Gln Gln Asp Met Pro Lys Leu Arg Arg Gln
327                 332                 337                 342

atc tac aag gag ctg tgt cac tgc aaa ctc act gtg tga gcctcgtacc       1592
Ile Tyr Lys Glu Leu Cys His Cys Lys Leu Thr Val  *
343                 348                 353

ccagacccca agcccataaa tgggaaggga gacatgggag tcccttccca agaaactcca    1652

gttcctttcc tctcttgcct cttcccactc acttcccttt ggtttttcat atttaaatgt    1712

ttcaatttct gtattttttt ttctttgaga gaatacttgt tgatttctga tgtgcagggg    1772

gtggctacag aaaagcccct ttcttcctct gtttgcaggg gagtgtggcc ctgtggcctg    1832

ggtggagcag tcatcctccc ccttccccgt gcagggagca ggaaatcagt gctgggggtg    1892

gtgggcggac aataggatca ctgcctgcca gatcttcaaa cttttatata tatatatata    1952

tatatatata tatatataaa aatatataaa tgccacggtc ctgctctggt caataaagga    2012

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aatttttttgt atttttagta gggacggggt ttcaccatgt tggtcaggct ggtctcaaac    180

tacaggcgtg agccacc atg ccc gcc caa gaa gtg gaa ata tct ttt aag        230
                   Met Pro Ala Gln Glu Val Glu Ile Ser Phe Lys
                    1               5

att gga gcc tac gat cag cag ata tgg gaa aag tca atc gaa cag act      278
Ile Gly Ala Tyr Asp Gln Gln Ile Trp Glu Lys Ser Ile Glu Gln Thr
 12                 17                  22                  27

cag att aag ggt ttg aaa aac aaa ccg aaa aag atg ggc cac ata aag      326
Gln Ile Lys Gly Leu Lys Asn Lys Pro Lys Lys Met Gly His Ile Lys
 28                 33                  38                  43

cca gac ttg att gac gtt gac tta atc aga ggg tca aca ttt gcc aaa      374
Pro Asp Leu Ile Asp Val Asp Leu Ile Arg Gly Ser Thr Phe Ala Lys
 44                 49                  54                  59

gca aaa cct gaa att cca tgg aca tct ctg act cgg aag ggg ctt gtt      422
Ala Lys Pro Glu Ile Pro Trp Thr Ser Leu Thr Arg Lys Gly Leu Val
 60                 65                  70                  75

cga gtt gta ttt ttt cca ttg ttc agc aat tgg tgg att cag gtt acc      470
Arg Val Val Phe Phe Pro Leu Phe Ser Asn Trp Trp Ile Gln Val Thr
 76                 81                  86                  91

tct tta aga atc ttt gtt tgg ctg tta cta ctt tat ttc atg caa gtt      518
Ser Leu Arg Ile Phe Val Trp Leu Leu Leu Leu Tyr Phe Met Gln Val
 92                 97                 102                 107

ata gca att gtc tta tat ttg atg atg cct att gtg aac ata agt gaa      566
Ile Ala Ile Val Leu Tyr Leu Met Met Pro Ile Val Asn Ile Ser Glu
108                113                 118                 123

gta ctt gga ccc ttg tgc ctt atg cta ctc atg gga act gtc cac tgt      614
Val Leu Gly Pro Leu Cys Leu Met Leu Leu Met Gly Thr Val His Cys
124                129                 134                 139

caa att gtg tct act cag ata aca aga cca tca gga aac aat gga aat      662
Gln Ile Val Ser Thr Gln Ile Thr Arg Pro Ser Gly Asn Asn Gly Asn
140                145                 150                 155

cga aga aga aga aaa tta cga aaa act gta aat ggt gat ggg agc cga      710
Arg Arg Arg Arg Lys Leu Arg Lys Thr Val Asn Gly Asp Gly Ser Arg
156                161                 166                 171
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gaa aat gga aat aac tcc tct gat aaa gtc aga gga ata gaa act ttg        758
Glu Asn Gly Asn Asn Ser Ser Asp Lys Val Arg Gly Ile Glu Thr Leu
172                 177                 182                 187

gaa tct gta ccc att att ggt ggt ttt tgg gag act atc ttt ggc aac        806
Glu Ser Val Pro Ile Ile Gly Gly Phe Trp Glu Thr Ile Phe Gly Asn
188                 193                 198                 203

agg att aaa aga gta aaa tta ata tct aac aaa ggg act gaa act gac        854
Arg Ile Lys Arg Val Lys Leu Ile Ser Asn Lys Gly Thr Glu Thr Asp
204                 209                 214                 219

aat gac cca agt tgt gtc cat cct atc att aag agg aga caa tgt cga        902
Asn Asp Pro Ser Cys Val His Pro Ile Ile Lys Arg Arg Gln Cys Arg
220                 225                 230                 235

cca gag att aga atg tgc caa aca aga gag aaa cca aaa ttt tca gat        950
Pro Glu Ile Arg Met Cys Gln Thr Arg Glu Lys Pro Lys Phe Ser Asp
236                 241                 246                 251

gga gaa aag tgc cgt agg gag gct ttt agg cgt ttg ggt aat ggg gtg        998
Gly Glu Lys Cys Arg Arg Glu Ala Phe Arg Arg Leu Gly Asn Gly Val
252                 257                 262                 267

tct gat gac ctg tca agt gaa gaa gat ggt gaa gca cgg aca cag atg       1046
Ser Asp Asp Leu Ser Ser Glu Glu Asp Gly Glu Ala Arg Thr Gln Met
268                 273                 278                 283

ata tta ttg cgt agg agt gtg gaa ggg gcc tca agt gac aat ggt tgt       1094
Ile Leu Leu Arg Arg Ser Val Glu Gly Ala Ser Ser Asp Asn Gly Cys
284                 289                 294                 299

gaa gtt aag aat aga aaa tca ata ctt tca agg cac cta aac tct cag       1142
Glu Val Lys Asn Arg Lys Ser Ile Leu Ser Arg His Leu Asn Ser Gln
300                 305                 310                 315

gta aag aaa acc act aca agg tgg tgt cat att gtg cgg gat tca gat       1190
Val Lys Lys Thr Thr Thr Arg Trp Cys His Ile Val Arg Asp Ser Asp
316                 321                 326                 331

agt ctg gct gaa tca gaa ttt gaa tca gca gcc ttc agc cag ggc tct       1238
Ser Leu Ala Glu Ser Glu Phe Glu Ser Ala Ala Phe Ser Gln Gly Ser
332                 337                 342                 347

aga tcg ggt gtg agt ggt ggc tct cga agc ctc aac atg tca aga aga       1286
Arg Ser Gly Val Ser Gly Gly Ser Arg Ser Leu Asn Met Ser Arg Arg
348                 353                 358                 363

gac tca gaa agc acc cgc cat gac tcg gag act gag gac atg tta tgg       1334
Asp Ser Glu Ser Thr Arg His Asp Ser Glu Thr Glu Asp Met Leu Trp
364                 369                 374                 379

gac gac ctg cta cat ggc cca gag tgc cgg tca tct gtc acc agt gac       1382
Asp Asp Leu Leu His Gly Pro Glu Cys Arg Ser Ser Val Thr Ser Asp
380                 385                 390                 395
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agt gag ggg gcc cat gtg aat acc ctt cac tca ggg acc aaa cgt gac      1430
Ser Glu Gly Ala His Val Asn Thr Leu His Ser Gly Thr Lys Arg Asp
396                 401                 406                 411

ccc aaa gag gat gtt ttt cag cag aat cat tta ttc tgg ctt cag aat      1478
Pro Lys Glu Asp Val Phe Gln Gln Asn His Leu Phe Trp Leu Gln Asn
412                 417                 422                 427

tca agt cct tcc tct gat cga gtt agt gca ata atc tgg gag ggg aat      1526
Ser Ser Pro Ser Ser Asp Arg Val Ser Ala Ile Ile Trp Glu Gly Asn
428                 433                 438                 443

gag tgc aaa aag atg gat atg tct gtg ttg gaa ata agt ggc atc atc      1574
Glu Cys Lys Lys Met Asp Met Ser Val Leu Glu Ile Ser Gly Ile Ile
444                 449                 454                 459

atg agc agg gtc aat gcc tat cag caa gga gta ggt tat cag atg ctg      1622
Met Ser Arg Val Asn Ala Tyr Gln Gln Gly Val Gly Tyr Gln Met Leu
460                 465                 470                 475

gga aat gtt gtc act att gga tta gca ttt ttt cca ttc tta cat cga      1670
Gly Asn Val Val Thr Ile Gly Leu Ala Phe Phe Pro Phe Leu His Arg
476                 481                 486                 491

ctt ttc cgt gag aag agc ctt gac caa cta aag tcc att tca gct gag      1718
Leu Phe Arg Glu Lys Ser Leu Asp Gln Leu Lys Ser Ile Ser Ala Glu
492                 497                 502                 507

gag atc ttg act ctc ttt tgt ggg gca cca cct gtt aca cct att att      1766
Glu Ile Leu Thr Leu Phe Cys Gly Ala Pro Pro Val Thr Pro Ile Ile
508                 513                 518                 523

gtt ttg tcg ata att aat ttt ttt gaa aga ttg tgt ctt act tgg atg      1814
Val Leu Ser Ile Ile Asn Phe Phe Glu Arg Leu Cys Leu Thr Trp Met
524                 529                 534                 539

ttt ttt ttc atg atg tgt gtg gca gag aga aca tat aaa cag aga ttt      1862
Phe Phe Phe Met Met Cys Val Ala Glu Arg Thr Tyr Lys Gln Arg Phe
540                 545                 550                 555

tta ttt gca aaa ctc ttc agc cat att act tct gcc agg aaa gct agg      1910
Leu Phe Ala Lys Leu Phe Ser His Ile Thr Ser Ala Arg Lys Ala Arg
556                 561                 566                 571

aaa tat gaa ata cct cat ttc aga ctt aag aag gtg gag aat att aaa      1958
Lys Tyr Glu Ile Pro His Phe Arg Leu Lys Lys Val Glu Asn Ile Lys
572                 577                 582                 587

ata tgg tta tca ctg cgt tcc tat cta aag aga cgg ggg cca cag cgt      2006
Ile Trp Leu Ser Leu Arg Ser Tyr Leu Lys Arg Arg Gly Pro Gln Arg
588                 593                 598                 603

tca gtt gat gtg gtt gta tcc tcg gtt ttc cta ctg aca ctt tcg att      2054
Ser Val Asp Val Val Val Ser Ser Val Phe Leu Leu Thr Leu Ser Ile
604                 609                 614                 619

gct ttc att tgt tgt gct cag gtt ctc caa gga cat aaa act ttc ctg      2102
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Ala Phe Ile Cys Cys Ala Gln Val Leu Gln Gly His Lys Thr Phe Leu
620                 625                 630                 635

aat gat gct tat aac tgg gag ttt ttg atc tgg gaa aca gct tta cta      2150
Asn Asp Ala Tyr Asn Trp Glu Phe Leu Ile Trp Glu Thr Ala Leu Leu
636                 641                 646                 651

ctt ttt tta ttg cgt ctg gcc tca ctg ggg tct gaa acc aat aag aaa      2198
Leu Phe Leu Leu Arg Leu Ala Ser Leu Gly Ser Glu Thr Asn Lys Lys
652                 657                 662                 667

tac agc aat gtt tca ata tta ctt aca gaa cag att aat tta tat ctt      2246
Tyr Ser Asn Val Ser Ile Leu Leu Thr Glu Gln Ile Asn Leu Tyr Leu
668                 673                 678                 683

aag atg gaa aaa aag cca aat aag aaa gaa cag ctt act cta gta aac      2294
Lys Met Glu Lys Lys Pro Asn Lys Lys Glu Gln Leu Thr Leu Val Asn
684                 689                 694                 699

aat gta tta aag ctg tcc acc aag ttg ttg aaa gag ctg gac aca cca      2342
Asn Val Leu Lys Leu Ser Thr Lys Leu Leu Lys Glu Leu Asp Thr Pro
700                 705                 710                 715

ttt aga ctc tat gga ctg aca atg aat ccc tta atc tac aat atc aca      2390
Phe Arg Leu Tyr Gly Leu Thr Met Asn Pro Leu Ile Tyr Asn Ile Thr
716                 721                 726                 731

aga gta gtt atc ctt tct gct gtc tca ggt gtt ata agt gat ctt cta      2438
Arg Val Val Ile Leu Ser Ala Val Ser Gly Val Ile Ser Asp Leu Leu
732                 737                 742                 747

gga ttt aat ata aga ctg tgg aaa att aaa tca taa gctg agttaaatgc      2488
Gly Phe Asn Ile Arg Leu Trp Lys Ile Lys Ser  *
748                 753                 758

ctggactctc ccctggctgg tatcaaaact tacctatcaa ggaaagtgat gactgcagaa    2548

accagtgaga tacccacctg cttgttcaca tgcacaggtg ctctcagctc tgccaaagcg    2608

aatgaatggt gtttccggag gagcaagtcc ttttccaact gggtgtgcat gctaaaaacc    2668

tgtattttca tgcttttcaa acaacatgaa tagtcagctg actaaagact gtgtgtgttg    2728

tggtaacaca aagacaattt tgtaagtttg cgcttcagta ctgtgacagt tatgtttact    2788

ggacatagtc ttttgggcaa ctatgataga tgcccaaagc atgaagcaaa tatcttttat    2848

tggaaatatg caaattcaat acttttccat tatagtctat agaactggag atttcatttc    2908

tctatcaaag agagatcaag cgaactattt taggttaaat ccgaataaaa gaactttact    2968

ggaaaaaaaa aaaa                                                      2982


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attcccgggt cgacccacgc gtccgggtga ggcggccgaa atcgtaggac ttccgaaagc     180

agcggtggcg tttgcttcac tgcttggaag tgtgagtgcg cgaag    atg cga aag      234
                                                     Met Arg Lys
                                                     1

gtg gtt ttg atc acc ggg gct agc agt ggc att ggc ctg gcc ctc tgc      282
Val Val Leu Ile Thr Gly Ala Ser Ser Gly Ile Gly Leu Ala Leu Cys
4                   9                   14                  19

aag cgg ctg ctg gcg gaa gat gat gag ctt cat ctg tgt ttg gcg tgc      330
Lys Arg Leu Leu Ala Glu Asp Asp Glu Leu His Leu Cys Leu Ala Cys
20                  25                  30                  35

agg aac atg agc aag gca gaa gct gtc tgt gct gct ctg ctg gcc tct      378
Arg Asn Met Ser Lys Ala Glu Ala Val Cys Ala Ala Leu Leu Ala Ser
36                  41                  46                  51

cac ccc act gct gag gtc acc att gtc cag gtg gat gtc agc aac ctg      426
His Pro Thr Ala Glu Val Thr Ile Val Gln Val Asp Val Ser Asn Leu
52                  57                  62                  67

cag tcg gtc ttc cgg gcc tcc aag gaa ctt aag caa agg ttt cag aga      474
Gln Ser Val Phe Arg Ala Ser Lys Glu Leu Lys Gln Arg Phe Gln Arg
68                  73                  78                  83

tta gac tgt ata tat cta aat gct ggg atc atg cct aat cca caa cta      522
Leu Asp Cys Ile Tyr Leu Asn Ala Gly Ile Met Pro Asn Pro Gln Leu
84                  89                  94                  99

aat atc aaa gca ctt ttc ttt ggc ctc ttt tca aga aaa gtg att cat      570
Asn Ile Lys Ala Leu Phe Phe Gly Leu Phe Ser Arg Lys Val Ile His
100                 105                 110                 115

atg ttc tcc aca gct gaa ggc ctg ctg acc cag ggt gat aag atc act      618
Met Phe Ser Thr Ala Glu Gly Leu Leu Thr Gln Gly Asp Lys Ile Thr
116                 121                 126                 131

gct gat gga ctt cag gag gtg ttt gag acc aat gtc ttt ggc cat ttt      666
Ala Asp Gly Leu Gln Glu Val Phe Glu Thr Asn Val Phe Gly His Phe
132                 137                 142                 147

atc ctg att cgg gaa ctg gag cct ctc ctc tgt cac agt gac aat cca      714
Ile Leu Ile Arg Glu Leu Glu Pro Leu Leu Cys His Ser Asp Asn Pro
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148 153 158 163

tct cag ctc atc tgg aca tca tct cgc agt gca agg aaa tct aat ttc 762
Ser Gln Leu Ile Trp Thr Ser Ser Arg Ser Ala Arg Lys Ser Asn Phe
164 169 174 179

agc ctc gag gac ttc cag cac agc aaa ggc aag gaa ccc tac agc tct 810
Ser Leu Glu Asp Phe Gln His Ser Lys Gly Lys Glu Pro Tyr Ser Ser
180 185 190 195

tcc aaa tat gcc act gac ctt ttg agt gtg gct ttg aac agg aac ttc 858
Ser Lys Tyr Ala Thr Asp Leu Leu Ser Val Ala Leu Asn Arg Asn Phe
196 201 206 211

aac cag cag ggt ctc tat tcc aat gtg gcc tgt cca ggt aca gca ttg 906
Asn Gln Gln Gly Leu Tyr Ser Asn Val Ala Cys Pro Gly Thr Ala Leu
212 217 222 227

acc aat ttg aca tat gga att ctg cct ccg ttt ata tgg acg ctg ttg 954
Thr Asn Leu Thr Tyr Gly Ile Leu Pro Pro Phe Ile Trp Thr Leu Leu
228 233 238 243

atg ccg gca ata ttg cta ctt cgc ttt ttt gca aat gca ttc act ttg 1002
Met Pro Ala Ile Leu Leu Leu Arg Phe Phe Ala Asn Ala Phe Thr Leu
244 249 254 259

aca cca tat aat gga aca gaa gct ctg gta tgg ctt ttc cac caa aag 1050
Thr Pro Tyr Asn Gly Thr Glu Ala Leu Val Trp Leu Phe His Gln Lys
260 265 270 275

cct gaa tct ctc aat cct ctg atc aaa tat ctg agt gcc acc act ggc 1098
Pro Glu Ser Leu Asn Pro Leu Ile Lys Tyr Leu Ser Ala Thr Thr Gly
276 281 286 291

ttt gga aga aat tat att atg acc cag aag atg gac cta gat gaa gac 1146
Phe Gly Arg Asn Tyr Ile Met Thr Gln Lys Met Asp Leu Asp Glu Asp
292 297 302 307

act gct gaa aaa ttt tat caa aag tta ctg gaa ctg gaa aag cac att 1194
Thr Ala Glu Lys Phe Tyr Gln Lys Leu Leu Glu Leu Glu Lys His Ile
308 313 318 323

agg gtc act att caa aaa aca gat aat cag gcc agg ctc agt ggc tca 1242
Arg Val Thr Ile Gln Lys Thr Asp Asn Gln Ala Arg Leu Ser Gly Ser
324 329 334 339

tgc cta taa ttccagc actttgggag gccaaggcag aaggatcact tgagaccagg 1298
Cys Leu *
340

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atgcacctcc ctctgcggtg gggtccggga catggcaggt aatgagccgg acgaggggag 180

ccaagctgga gtttacacag gcaaactgtc agaaaagagt agcctgggct gtctggaaat 240

ctgagcc atg gac ttt ccc cag cac agc cag cat gtc ttg gaa cag ctg 289
Met Asp Phe Pro Gln His Ser Gln His Val Leu Glu Gln Leu
1 5 10

aac cag cag cgg cag ctg ggg ctt ctc tgt gac tgc acc ttt gtg gtg 337
Asn Gln Gln Arg Gln Leu Gly Leu Leu Cys Asp Cys Thr Phe Val Val
15 20 25 30

gac ggt gtt cac ttt aag gct cat aaa gca gtg ctg gcg gcc tgc agc 385
Asp Gly Val His Phe Lys Ala His Lys Ala Val Leu Ala Ala Cys Ser
31 36 41 46

gag tac ttc aag atg ctc ttc gtg gac cag aag gac gtg gtg cac ctg 433
Glu Tyr Phe Lys Met Leu Phe Val Asp Gln Lys Asp Val Val His Leu
47 52 57 62

gac atc agt aac gcg gca ggc ctg ggg cag gtg ctg gag ttt atg tac 481
Asp Ile Ser Asn Ala Ala Gly Leu Gly Gln Val Leu Glu Phe Met Tyr
63 68 73 78

acg gcc aag ctg agc ctg agc cct gag aac gtg gat gat gtg ctg gcc 529
Thr Ala Lys Leu Ser Leu Ser Pro Glu Asn Val Asp Asp Val Leu Ala
79 84 89 94

gtg gcc act ttc ctc caa atg cag gac atc atc acg gcc tgc cat gcc 577
Val Ala Thr Phe Leu Gln Met Gln Asp Ile Ile Thr Ala Cys His Ala
95 100 105 110

ctc aag tca ctt gct gag ccg gct acc agc cct ggg gga aat gcg gag 625
Leu Lys Ser Leu Ala Glu Pro Ala Thr Ser Pro Gly Gly Asn Ala Glu
111 116 121 126

gcc ttg gcc aca gaa gga ggg gac aag aga gcc aaa gag gag aag gtg 673
Ala Leu Ala Thr Glu Gly Gly Asp Lys Arg Ala Lys Glu Glu Lys Val
127 132 137 142

gcc acc agc acg ctg agc agg ctg gag cag gca gga cgc agc aca ccc 721
Ala Thr Ser Thr Leu Ser Arg Leu Glu Gln Ala Gly Arg Ser Thr Pro
143 148 153 158

ata ggc ccc agc agg gac ctc aag gag gag cgc ggc ggt cag gcc cag 769

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Ile Gly Pro Ser Arg Asp Leu Lys Glu Glu Arg Gly Gly Gln Ala Gln
159                 164                 169                 174

agt gcg gcc agc ggt gca gag cag aca gag aaa gcc gat gcg ccc cgg      817
Ser Ala Ala Ser Gly Ala Glu Gln Thr Glu Lys Ala Asp Ala Pro Arg
175                 180                 185                 190

gag ccg ccg cct gtg gag ctc aag cca gac ccc acg agt ggc atg gct      865
Glu Pro Pro Pro Val Glu Leu Lys Pro Asp Pro Thr Ser Gly Met Ala
191                 196                 201                 206

gcc gca gaa gct gag gcc gct ttg tcc gag agc tcg gag caa gaa atg      913
Ala Ala Glu Ala Glu Ala Ala Leu Ser Glu Ser Ser Glu Gln Glu Met
207                 212                 217                 222

gag gtg gag ccc gcc cgg aaa ggg gaa gag gag caa aag gag caa gag      961
Glu Val Glu Pro Ala Arg Lys Gly Glu Glu Glu Gln Lys Glu Gln Glu
223                 228                 233                 238

gag caa gag gag gag ggc gca ggg cca gct gag gtc aag gag gag ggt     1009
Glu Gln Glu Glu Glu Gly Ala Gly Pro Ala Glu Val Lys Glu Glu Gly
239                 244                 249                 254

tcc cag ctg gag aac gga gag gcc ccc gag gag aac gag aat gag gag     1057
Ser Gln Leu Glu Asn Gly Glu Ala Pro Glu Glu Asn Glu Asn Glu Glu
255                 260                 265                 270

tca gcg ggc aca gac tcg ggg cag gag ctc ggc tcc gag gcc cgg ggc     1105
Ser Ala Gly Thr Asp Ser Gly Gln Glu Leu Gly Ser Glu Ala Arg Gly
271                 276                 281                 286

ctg cgc tca ggc acc tac ggc gac cgc acg gag tcc aag gcc tac ggc     1153
Leu Arg Ser Gly Thr Tyr Gly Asp Arg Thr Glu Ser Lys Ala Tyr Gly
287                 292                 297                 302

tcc gtc atc cac aag tgc gag gac tgt ggg aag gag ttc acg cac acg     1201
Ser Val Ile His Lys Cys Glu Asp Cys Gly Lys Glu Phe Thr His Thr
303                 308                 313                 318

ggg aac ttc aag cgg cac atc cgc atc cac acg ggg gag aag ccc ttc     1249
Gly Asn Phe Lys Arg His Ile Arg Ile His Thr Gly Glu Lys Pro Phe
319                 324                 329                 334

tcg tgc cgg gag tgc agc aag gcc ttt tcc gac ccg gcc gcg tgc aag     1297
Ser Cys Arg Glu Cys Ser Lys Ala Phe Ser Asp Pro Ala Ala Cys Lys
335                 340                 345                 350

gcc cat gag aag acg cac agc cct ctg aag ccc tac ggc tgc gag gag     1345
Ala His Glu Lys Thr His Ser Pro Leu Lys Pro Tyr Gly Cys Glu Glu
351                 356                 361                 366

tgc ggg aag agc tac cgc ctc atc agc ctg ctg aac ctg cac aag aag     1393
Cys Gly Lys Ser Tyr Arg Leu Ile Ser Leu Leu Asn Leu His Lys Lys
367                 372                 377                 382

cgg cac tcg ggc gag gcg cgc tac cgc tgc gag gac tgc ggc aag ctc     1441
Arg His Ser Gly Glu Ala Arg Tyr Arg Cys Glu Asp Cys Gly Lys Leu
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383 388 393 398

ttc acc acc tcg ggc aac ctc aag cgc cac cag ctg gtg cac agc ggc 1489
Phe Thr Thr Ser Gly Asn Leu Lys Arg His Gln Leu Val His Ser Gly
399 404 409 414

gag aag ccc tac cag tgc gac tac tgc ggc cgc tcc ttc tcc gac ccc 1537
Glu Lys Pro Tyr Gln Cys Asp Tyr Cys Gly Arg Ser Phe Ser Asp Pro
415 420 425 430

act tcc aag atg cgc cac ctg gag acc cac gac acg gac aag gag cac 1585
Thr Ser Lys Met Arg His Leu Glu Thr His Asp Thr Asp Lys Glu His
431 436 441 446

aag tgc cca cac tgc gac aag aag ttc aac cag gta ggg aac ctg aag 1633
Lys Cys Pro His Cys Asp Lys Lys Phe Asn Gln Val Gly Asn Leu Lys
447 452 457 462

gcc cac ctg aag atc cac atc gct gac ggg ccc ctc aag tgc cga gag 1681
Ala His Leu Lys Ile His Ile Ala Asp Gly Pro Leu Lys Cys Arg Glu
463 468 473 478

tgt ggg aag cag ttc acc acc tca ggg aac ctg aag cgg cac ctt cgg 1729
Cys Gly Lys Gln Phe Thr Thr Ser Gly Asn Leu Lys Arg His Leu Arg
479 484 489 494

atc cac agc ggg gag aag ccc tac gtg tgc atc cac tgc cag cga cag 1777
Ile His Ser Gly Glu Lys Pro Tyr Val Cys Ile His Cys Gln Arg Gln
495 500 505 510

ttt gca gac ccc ggc gct ctg cag cgg cac gtc cgc att cac aca ggt 1825
Phe Ala Asp Pro Gly Ala Leu Gln Arg His Val Arg Ile His Thr Gly
511 516 521 526

gag aag cca tgc cag tgt gtg atg tgc ggt aag gcc ttc acc cag gcc 1873
Glu Lys Pro Cys Gln Cys Val Met Cys Gly Lys Ala Phe Thr Gln Ala
527 532 537 542

agc tcc ctc atc gcc cac gtg cgc cag cac acc ggg gag aag ccc tac 1921
Ser Ser Leu Ile Ala His Val Arg Gln His Thr Gly Glu Lys Pro Tyr
543 548 553 558

gtc tgc gag cgc tgc ggc aag aga ttc gtc cag tcc agc cag ttg gcc 1969
Val Cys Glu Arg Cys Gly Lys Arg Phe Val Gln Ser Ser Gln Leu Ala
559 564 569 574

aat cat att cgc cac cac gac aac atc cgc cca cac aag tgc agc gtg 2017
Asn His Ile Arg His His Asp Asn Ile Arg Pro His Lys Cys Ser Val
575 580 585 590

tgc agc aag gcc ttc gtg aac gtg ggg gac ctg tcc aag cac atc atc 2065
Cys Ser Lys Ala Phe Val Asn Val Gly Asp Leu Ser Lys His Ile Ile
591 596 601 606

att cac act gga gag aag cct tac ctg tgt gat aag tgt ggg cgt ggc 2113
Ile His Thr Gly Glu Lys Pro Tyr Leu Cys Asp Lys Cys Gly Arg Gly
607 612 617 622

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ttc aac cgg gta gac aac ctg cgc tcc cac gtg aag acc gtg cac cag      2161
Phe Asn Arg Val Asp Asn Leu Arg Ser His Val Lys Thr Val His Gln
623                 628                 633                 638

ggc aag gca ggc atc aag atc ctg gag ccc gag gag ggc agt gag gtc      2209
Gly Lys Ala Gly Ile Lys Ile Leu Glu Pro Glu Glu Gly Ser Glu Val
639                 644                 649                 654

agc gtg gtc act gtg gat gac atg gtc acg ctg gct acc gag gca ctg      2257
Ser Val Val Thr Val Asp Asp Met Val Thr Leu Ala Thr Glu Ala Leu
655                 660                 665                 670

gca gcg aca gcc gtc act cag ctc aca gtg gtg ccg gtg gga gct gca      2305
Ala Ala Thr Ala Val Thr Gln Leu Thr Val Val Pro Val Gly Ala Ala
671                 676                 681                 686

gtg aca gcc gat gag acg gaa gtc ctg aag gcc gag atc agc aaa gct      2353
Val Thr Ala Asp Glu Thr Glu Val Leu Lys Ala Glu Ile Ser Lys Ala
687                 692                 697                 702

gtg aag caa gtg cag gaa gaa gac ccc aac act cac atc ctc tac gcc      2401
Val Lys Gln Val Gln Glu Glu Asp Pro Asn Thr His Ile Leu Tyr Ala
703                 708                 713                 718

tgt gac tcc tgt ggg gac aag ttt ctg gat gcc aac agc ctg gct cag      2449
Cys Asp Ser Cys Gly Asp Lys Phe Leu Asp Ala Asn Ser Leu Ala Gln
719                 724                 729                 734

cat gtg cga atc cac aca gcc cag gca ctg gtc atg ttc cag aca gac      2497
His Val Arg Ile His Thr Ala Gln Ala Leu Val Met Phe Gln Thr Asp
735                 740                 745                 750

gcg gac ttc tat cag cag tat ggg cca ggt ggc acg tgg cct gcc ggg      2545
Ala Asp Phe Tyr Gln Gln Tyr Gly Pro Gly Gly Thr Trp Pro Ala Gly
751                 756                 761                 766

cag gtg ctg cag gct ggg gag ctg gtc ttc cgc cct cgc gac ggg gct      2593
Gln Val Leu Gln Ala Gly Glu Leu Val Phe Arg Pro Arg Asp Gly Ala
767                 772                 777                 782

gag ggc cag ccc gca ctg gca gag acc tcc cct aca gct cct gaa tgt      2641
Glu Gly Gln Pro Ala Leu Ala Glu Thr Ser Pro Thr Ala Pro Glu Cys
783                 788                 793                 798

ccc ccg cct gcc gag tga gctggc ggcccttctg actgtttatt taaggatgga      2695
Pro Pro Pro Ala Glu  *
799                 804

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ggaggcgggt gattctggct ttgtcagtct ctctcggctg ggcccatctc tgagggacaa     180

ggacctggaa  atg gag gag cta atg ctg cag gat gag aca ctg ctg ggg       229
            Met Glu Glu Leu Met Leu Gln Asp Glu Thr Leu Leu Gly
            1               5                   10

acc atg cag agc tac atg gat gcc tcc ctt atc tcc ctc att gag gat       277
Thr Met Gln Ser Tyr Met Asp Ala Ser Leu Ile Ser Leu Ile Glu Asp
14                  19                  24                  29

ttt ggg agc ctt gga gag gtt gaa atg tct ctt cca gat ccc tct tgg       325
Phe Gly Ser Leu Gly Glu Val Glu Met Ser Leu Pro Asp Pro Ser Trp
30                  35                  40                  45

gac ttc tcc cca ccc tct ttc tta gag acc tct tcc ccc aag ctt cct       373
Asp Phe Ser Pro Pro Ser Phe Leu Glu Thr Ser Ser Pro Lys Leu Pro
46                  51                  56                  61

agc tgg aga ccc cca aga tca aga cca cgc tgg ggc caa tcc cca cct       421
Ser Trp Arg Pro Pro Arg Ser Arg Pro Arg Trp Gly Gln Ser Pro Pro
62                  67                  72                  77

ccc cag cag cgc agt gat gga gaa gaa gag gag gag gtg gcc agc ttc       469
Pro Gln Gln Arg Ser Asp Gly Glu Glu Glu Glu Glu Val Ala Ser Phe
78                  83                  88                  93

agt ggc cag att ctt gcc ggg gag ctt gac aac tgt gtg agc agt atc       517
Ser Gly Gln Ile Leu Ala Gly Glu Leu Asp Asn Cys Val Ser Ser Ile
94                  99                  104                 109

ccg gac ttc ccc atg cat ttg gcc tgc cct gag gag gaa gat aaa gca       565
Pro Asp Phe Pro Met His Leu Ala Cys Pro Glu Glu Glu Asp Lys Ala
110                 115                 120                 125

aca gca gca gag atg gca gtg cca gca gct ggt gat gag agc atc tcc       613
Thr Ala Ala Glu Met Ala Val Pro Ala Ala Gly Asp Glu Ser Ile Ser
126                 131                 136                 141

tcc ctg agt gag ctg gtg cgg gcc atg cac cca tac tgc ctg ccc aac       661
Ser Leu Ser Glu Leu Val Arg Ala Met His Pro Tyr Cys Leu Pro Asn
142                 147                 152                 157

ctc acc cac ctg gca tca ctt gag gat gag ctt cag gag cag cca gat       709
Leu Thr His Leu Ala Ser Leu Glu Asp Glu Leu Gln Glu Gln Pro Asp
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158                 163                 168                 173

gat ttg aca ctg cct gag ggc tgc gta gtg ctg gag att gtg ggg cag       757
Asp Leu Thr Leu Pro Glu Gly Cys Val Val Leu Glu Ile Val Gly Gln
174                 179                 184                 189

gca gcc aca gct ggc gat gac ctg gag atc cca gtt gtg gtg cga cag       805
Ala Ala Thr Ala Gly Asp Asp Leu Glu Ile Pro Val Val Val Arg Gln
190                 195                 200                 205

gtc tct cct gga ccc cgg cct gtg ctc ctg gat gac tcg cta gag act       853
Val Ser Pro Gly Pro Arg Pro Val Leu Leu Asp Asp Ser Leu Glu Thr
206                 211                 216                 221

agt tct gcc ttg cag ctg ctt atg cct aca ctg gag tca gag aca gag       901
Ser Ser Ala Leu Gln Leu Leu Met Pro Thr Leu Glu Ser Glu Thr Glu
222                 227                 232                 237

gct gct gtg ccc aag gta acc ctc tgc tct gag aaa gag ggg ttg tca       949
Ala Ala Val Pro Lys Val Thr Leu Cys Ser Glu Lys Glu Gly Leu Ser
238                 243                 248                 253

ttg aac tca gag gag aag ctg gac tca gcc tgc tta ttg aag ccc agg       997
Leu Asn Ser Glu Glu Lys Leu Asp Ser Ala Cys Leu Leu Lys Pro Arg
254                 259                 264                 269

gag gtc gtg gag ccg gtg gtg ccc aag gag cct cag aac cca cct gcc      1045
Glu Val Val Glu Pro Val Val Pro Lys Glu Pro Gln Asn Pro Pro Ala
270                 275                 280                 285

aat gca gca cca ggt tcc cag aga gct cga aag ggc agg aag aag aag      1093
Asn Ala Ala Pro Gly Ser Gln Arg Ala Arg Lys Gly Arg Lys Lys Lys
286                 291                 296                 301

agc aag gag cag cca gca gcc tgt gtg gaa ggc tat gcc agg agg ctg      1141
Ser Lys Glu Gln Pro Ala Ala Cys Val Glu Gly Tyr Ala Arg Arg Leu
302                 307                 312                 317

agg tca tct tct cgc ggg cag tct act gta ggt aca gaa gtg acc tct      1189
Arg Ser Ser Ser Arg Gly Gln Ser Thr Val Gly Thr Glu Val Thr Ser
318                 323                 328                 333

cag gta gac aac ttg cag aaa cag cct cag gaa gaa ctt caa aaa gag      1237
Gln Val Asp Asn Leu Gln Lys Gln Pro Gln Glu Glu Leu Gln Lys Glu
334                 339                 344                 349

tct ggg cct ctc cag ggt aag ggg aag ccc cgg gct tgg gct cgg gcc      1285
Ser Gly Pro Leu Gln Gly Lys Gly Lys Pro Arg Ala Trp Ala Arg Ala
350                 355                 360                 365

tgg gca gct gcc ttg gag aat tct agc cct aag aac ttg gag aga agt      1333
Trp Ala Ala Ala Leu Glu Asn Ser Ser Pro Lys Asn Leu Glu Arg Ser
366                 371                 376                 381

gct gga caa agt agt cct gct aaa gaa ggc cct cta gac ctc tac cca      1381
Ala Gly Gln Ser Ser Pro Ala Lys Glu Gly Pro Leu Asp Leu Tyr Pro
382                 387                 392                 397
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aag ctg gct gac act atc caa acc aat cct ata cca acc cat ctc tca 1429
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398 403 408 413

ttg gtc gac tct gcc caa gcc agc ccc atg cca gtt gac tct gtt gaa 1477
Leu Val Asp Ser Ala Gln Ala Ser Pro Met Pro Val Asp Ser Val Glu
414 419 424 429

gct gat ccc act gca gtt ggc cct gtt cta gct ggc cct gta cct gtt 1525
Ala Asp Pro Thr Ala Val Gly Pro Val Leu Ala Gly Pro Val Pro Val
430 435 440 445

gac cct ggg ttg gtt gac ctt gct tca acc agc tca gaa ctg gtt gag 1573
Asp Pro Gly Leu Val Asp Leu Ala Ser Thr Ser Ser Glu Leu Val Glu
446 451 456 461

cct ctc ccg gct gag cca gtg ctg atc aac cca gtc ctg gct gac tca 1621
Pro Leu Pro Ala Glu Pro Val Leu Ile Asn Pro Val Leu Ala Asp Ser
462 467 472 477

gca gca gtt gac cct gca gtg gtt ccc atc tca gat aac ttg cca cca 1669
Ala Ala Val Asp Pro Ala Val Val Pro Ile Ser Asp Asn Leu Pro Pro
478 483 488 493

gtt gat gct gtc ccg tct ggc cca gca cca gtt gat cta gca ctg gtt 1717
Val Asp Ala Val Pro Ser Gly Pro Ala Pro Val Asp Leu Ala Leu Val
494 499 504 509

gac cct gtt cct aat gac ctg act cca gtt gac cca gtg cta gtt aag 1765
Asp Pro Val Pro Asn Asp Leu Thr Pro Val Asp Pro Val Leu Val Lys
510 515 520 525

tcc aga cca act gat ccc aga cgt ggt gca gtg tca tca gcc ctg ggg 1813
Ser Arg Pro Thr Asp Pro Arg Arg Gly Ala Val Ser Ser Ala Leu Gly
526 531 536 541

ggt tca gca ccc cag ctc ctc gtg gag tca gag tcc ttg gac cca cca 1861
Gly Ser Ala Pro Gln Leu Leu Val Glu Ser Glu Ser Leu Asp Pro Pro
542 547 552 557

aag acc atc atc cct gaa gtc aaa gag gtt gtg gat tct ctg aaa att 1909
Lys Thr Ile Ile Pro Glu Val Lys Glu Val Val Asp Ser Leu Lys Ile
558 563 568 573

gaa agt ggt acc agt gct aca acc cat gaa gcc aga cct cgg cct ctc 1957
Glu Ser Gly Thr Ser Ala Thr Thr His Glu Ala Arg Pro Arg Pro Leu
574 579 584 589

agc tta tct gag tac cgg cga cga agg cag caa cgc caa gca gaa aca 2005
Ser Leu Ser Glu Tyr Arg Arg Arg Arg Gln Gln Arg Gln Ala Glu Thr
590 595 600 605

gaa gag aga agt cca cag ccc cca act ggg aag tgg cct agc ctt cca 2053
Glu Glu Arg Ser Pro Gln Pro Pro Thr Gly Lys Trp Pro Ser Leu Pro
606 611 616 621

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gag act ccc aca ggg ctg gca gac atc cct tgt ctt gtc atc cca cca      2101
Glu Thr Pro Thr Gly Leu Ala Asp Ile Pro Cys Leu Val Ile Pro Pro
622                 627                 632                 637

gcc cca gcc aag aag aca gct ctg cag aga agc cct gaa aca ccc ctt      2149
Ala Pro Ala Lys Lys Thr Ala Leu Gln Arg Ser Pro Glu Thr Pro Leu
638                 643                 648                 653

gag att tgc ctt gtg cct gta ggt ccc agc cct gct tct cct agt cct      2197
Glu Ile Cys Leu Val Pro Val Gly Pro Ser Pro Ala Ser Pro Ser Pro
654                 659                 664                 669

gag cca cct gta agc aaa cct gtg gcc tca tct ccc act gag cag gtg      2245
Glu Pro Pro Val Ser Lys Pro Val Ala Ser Ser Pro Thr Glu Gln Val
670                 675                 680                 685

cca tcc cag gag atg cca ctg ttg gcg aga cct tcc cct cct gtg cag      2293
Pro Ser Gln Glu Met Pro Leu Leu Ala Arg Pro Ser Pro Pro Val Gln
686                 691                 696                 701

tct gtg tcc cct gct gtg ccc aca cct ccc tcg atg tct gct gcc ctg      2341
Ser Val Ser Pro Ala Val Pro Thr Pro Pro Ser Met Ser Ala Ala Leu
702                 707                 712                 717

cct ttc cct gca ggt ggg ctt ggc atg ccc ccc agt ctg ccc cca cct      2389
Pro Phe Pro Ala Gly Gly Leu Gly Met Pro Pro Ser Leu Pro Pro Pro
718                 723                 728                 733

ccc ttg cag cct cct agt ctt cca ttg tct atg ggg cca gta cta cct      2437
Pro Leu Gln Pro Pro Ser Leu Pro Leu Ser Met Gly Pro Val Leu Pro
734                 739                 744                 749

gat ccg ttt act cac tat gcc ccc ttg cca tcc tgg cct tgt tat cct      2485
Asp Pro Phe Thr His Tyr Ala Pro Leu Pro Ser Trp Pro Cys Tyr Pro
750                 755                 760                 765

cat gtg tcc cct tct ggc tat cct tgc ctg ccc ccc cca cca acg gtg      2533
His Val Ser Pro Ser Gly Tyr Pro Cys Leu Pro Pro Pro Pro Thr Val
766                 771                 776                 781

ccc cta gtg tct ggt act cct ggt gcc tat gcc gtg cct ccc act tgc      2581
Pro Leu Val Ser Gly Thr Pro Gly Ala Tyr Ala Val Pro Pro Thr Cys
782                 787                 792                 797

agt gtg cct tgg gca ccc cct cct gcc cca gtc tca cct tac agt tcc      2629
Ser Val Pro Trp Ala Pro Pro Pro Ala Pro Val Ser Pro Tyr Ser Ser
798                 803                 808                 813

aca tgt acc tat ggg ccc ttg gga tgg ggc cca ggg cct caa cat gct      2677
Thr Cys Thr Tyr Gly Pro Leu Gly Trp Gly Pro Gly Pro Gln His Ala
814                 819                 824                 829

cca ttc tgg tct act gtt ccc cca cct cct ttg cct cca gcc tcc att      2725
Pro Phe Trp Ser Thr Val Pro Pro Pro Pro Leu Pro Pro Ala Ser Ile
830                 835                 840                 845

ggg aga gct gtt ccc caa cct aaa atg gag tct agg ggc act cca gct      2773
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Gly Arg Ala Val Pro Gln Pro Lys Met Glu Ser Arg Gly Thr Pro Ala
846                 851                 856                 861

ggc cct cct gaa aat gta ctt ccc ttg tcg atg gct cct ccc ctc agt      2821
Gly Pro Pro Glu Asn Val Leu Pro Leu Ser Met Ala Pro Pro Leu Ser
862                 867                 872                 877

ctt ggg cta cct ggc cat gga gct cct cag aca gag cct acc aag gtg      2869
Leu Gly Leu Pro Gly His Gly Ala Pro Gln Thr Glu Pro Thr Lys Val
878                 883                 888                 893

gag gtc aag cca gtg cct gca tct ccc cat ccg aaa cac aag gtg tct      2917
Glu Val Lys Pro Val Pro Ala Ser Pro His Pro Lys His Lys Val Ser
894                 899                 904                 909

gcc ctg gtg caa agt ccc cag atg aag gct cta gca tgt gtg tct gct      2965
Ala Leu Val Gln Ser Pro Gln Met Lys Ala Leu Ala Cys Val Ser Ala
910                 915                 920                 925

gaa ggt gtg act gtt gag gag cct gca tca gag agg cta aag cct gag      3013
Glu Gly Val Thr Val Glu Glu Pro Ala Ser Glu Arg Leu Lys Pro Glu
926                 931                 936                 941

acc caa gag acc agg ccc agg gag aag ccc ccc ttg cct gct acc aag      3061
Thr Gln Glu Thr Arg Pro Arg Glu Lys Pro Pro Leu Pro Ala Thr Lys
942                 947                 952                 957

gct gtt ccc aca cca agg cag agc act gtc ccc aag ctg cct gct gtc      3109
Ala Val Pro Thr Pro Arg Gln Ser Thr Val Pro Lys Leu Pro Ala Val
958                 963                 968                 973

cac cca gcc cgt cta agg aag ctg tcc ttc ctg cct acc cca cgt act      3157
His Pro Ala Arg Leu Arg Lys Leu Ser Phe Leu Pro Thr Pro Arg Thr
974                 979                 984                 989

cag ggt tct gaa gat gtg gta cag gct ttc atc agt gag att gga att      3205
Gln Gly Ser Glu Asp Val Val Gln Ala Phe Ile Ser Glu Ile Gly Ile
990                 995                 1000                1005

gag gca tcg gac ctg tcc agt ctg ctg gag cag ttt gag aaa tca gaa      3253
Glu Ala Ser Asp Leu Ser Ser Leu Leu Glu Gln Phe Glu Lys Ser Glu
1006                1011                1016                1021

gcc aaa aag gag tgt cct cct ccg gct cct gct gac agc ttg gct gta      3301
Ala Lys Lys Glu Cys Pro Pro Pro Ala Pro Ala Asp Ser Leu Ala Val
1022                1027                1032                1037

gga aac tca ggc ggc gtt gac att ccc cag gag aag agg ccc cta gac      3349
Gly Asn Ser Gly Gly Val Asp Ile Pro Gln Glu Lys Arg Pro Leu Asp
1038                1043                1048                1053

cgg tta caa gcc cca gaa ctg gcc aac gtg gca ggg ctc acc cct cca      3397
Arg Leu Gln Ala Pro Glu Leu Ala Asn Val Ala Gly Leu Thr Pro Pro
1054                1059                1064                1069

gct acc cct ccc cac cag tta tgg aag ccc ctg gct gct gtc tca ctg      3445
Ala Thr Pro Pro His Gln Leu Trp Lys Pro Leu Ala Ala Val Ser Leu
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1070                1075                1080                1085

ctg gcc aaa gcc aaa tct cct aag tcc acc gcc cag gag gga acc ctg      3493
Leu Ala Lys Ala Lys Ser Pro Lys Ser Thr Ala Gln Glu Gly Thr Leu
1086                1091                1096                1101

aag cct gaa gga gtt acg gag gcc aaa cat cca gct gca gtt cgc ctc      3541
Lys Pro Glu Gly Val Thr Glu Ala Lys His Pro Ala Ala Val Arg Leu
1102                1107                1112                1117

caa gaa ggg gtc cat ggc cct agt cga gtc cat gtg ggc tct ggg gac      3589
Gln Glu Gly Val His Gly Pro Ser Arg Val His Val Gly Ser Gly Asp
1118                1123                1128                1133

cat gac tat tgt gtc cgg agc agg acc ccc cca aaa aag atg cct gcc      3637
His Asp Tyr Cys Val Arg Ser Arg Thr Pro Pro Lys Lys Met Pro Ala
1134                1139                1144                1149

cta gtc att cca gag gtg ggc tcc cga tgg aat gtc aag cgc cat cag      3685
Leu Val Ile Pro Glu Val Gly Ser Arg Trp Asn Val Lys Arg His Gln
1150                1155                1160                1165

gac atc acc atc aaa cct gtc ttg tcc ttg ggc cca gct gcc cct ccg      3733
Asp Ile Thr Ile Lys Pro Val Leu Ser Leu Gly Pro Ala Ala Pro Pro
1166                1171                1176                1181

ccc cca tgc ata gct gcc tcc cgg gag ccg ctt gat cac agg act agc      3781
Pro Pro Cys Ile Ala Ala Ser Arg Glu Pro Leu Asp His Arg Thr Ser
1182                1187                1192                1197

agt gag cag gca gat ccc tca gca ccc tgc ctt gcc cca tcc agc ttg      3829
Ser Glu Gln Ala Asp Pro Ser Ala Pro Cys Leu Ala Pro Ser Ser Leu
1198                1203                1208                1213

ctg tcc cct gag gcc tca ccc tgc cgg aat gac atg aac act agg act      3877
Leu Ser Pro Glu Ala Ser Pro Cys Arg Asn Asp Met Asn Thr Arg Thr
1214                1219                1224                1229

ccc cct gaa ccc tca gcc aag cag cgg tca atg cgc tgt tac cga aaa      3925
Pro Pro Glu Pro Ser Ala Lys Gln Arg Ser Met Arg Cys Tyr Arg Lys
1230                1235                1240                1245

gcc tgc agg tca gcc agc ccc tca agc cag ggc tgg cag ggc cgc cga      3973
Ala Cys Arg Ser Ala Ser Pro Ser Ser Gln Gly Trp Gln Gly Arg Arg
1246                1251                1256                1261

ggc cgc aac agc cgt tct gtc agc tct ggg tcc aac cgg act agc gaa      4021
Gly Arg Asn Ser Arg Ser Val Ser Ser Gly Ser Asn Arg Thr Ser Glu
1262                1267                1272                1277

gca tct tcc tca tcc tca tca tcg tct tcc tca tcc cga tct cgg tcc      4069
Ala Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Arg Ser Arg Ser
1278                1283                1288                1293

agg tcc ctc tcc ccc cca cac aag agg tgg cga agg tcc agc tgt agt      4117
Arg Ser Leu Ser Pro Pro His Lys Arg Trp Arg Arg Ser Ser Cys Ser
1294                1299                1304                1309
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tcc tct gga cgt tct cga aga tgc tct tcc tct tct tcg tca tca tct      4165
Ser Ser Gly Arg Ser Arg Arg Cys Ser Ser Ser Ser Ser Ser Ser Ser
1310                1315                1320                1325

tcc tct tcg tct tcc tca tcc tca tca tcc agt tct cga agc cgc tca      4213
Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Arg Ser Arg Ser
1326                1331                1336                1341

cga tcc cca tcc ccc cgc cgg aga agt gac agg agg cgg cgg tac agc      4261
Arg Ser Pro Ser Pro Arg Arg Arg Ser Asp Arg Arg Arg Arg Tyr Ser
1342                1347                1352                1357

tct tat cgt tca cat gac cat tac caa agg caa aga gtg cta caa aag      4309
Ser Tyr Arg Ser His Asp His Tyr Gln Arg Gln Arg Val Leu Gln Lys
1358                1363                1368                1373

gag cgt gca ata gaa gaa aga agg gtg gtc ttc att gga aag ata cct      4357
Glu Arg Ala Ile Glu Glu Arg Arg Val Val Phe Ile Gly Lys Ile Pro
1374                1379                1384                1389

ggc cgc atg act cga tca gag ctg aaa cag agg ttc tcc gtt ttt gga      4405
Gly Arg Met Thr Arg Ser Glu Leu Lys Gln Arg Phe Ser Val Phe Gly
1390                1395                1400                1405

gag att gag gag tgc acc atc cac ttc cgt gtc caa ggg gac aac tac      4453
Glu Ile Glu Glu Cys Thr Ile His Phe Arg Val Gln Gly Asp Asn Tyr
1406                1411                1416                1421

ggc ttc gtc act tat cgc tat gct gag gag gca ttt gca gcc att gag      4501
Gly Phe Val Thr Tyr Arg Tyr Ala Glu Glu Ala Phe Ala Ala Ile Glu
1422                1427                1432                1437

agt ggc cac aag ctg cgg cag gca gat gag cag ccc ttt gat ctc tgc      4549
Ser Gly His Lys Leu Arg Gln Ala Asp Glu Gln Pro Phe Asp Leu Cys
1438                1443                1448                1453

ttt ggg ggc cga agg cag ttc tgc aag agg agc tat tct gat ctt gac      4597
Phe Gly Gly Arg Arg Gln Phe Cys Lys Arg Ser Tyr Ser Asp Leu Asp
1454                1459                1464                1469

tcc aac cgg gaa gac ttt gac cca gca cct gta aag agc aaa ttt gat      4645
Ser Asn Arg Glu Asp Phe Asp Pro Ala Pro Val Lys Ser Lys Phe Asp
1470                1475                1480                1485

tct ctt gac ttt gac aca ttg ttg aaa cag gcc cag aag aac ctc agg      4693
Ser Leu Asp Phe Asp Thr Leu Leu Lys Gln Ala Gln Lys Asn Leu Arg
1486                1491                1496                1501

agg taa ccttgggccc ttccctgcta tcctttttct cctttggagg tgcccaacct       4749
Arg  *
1502

cctccacccc cttcccctac tctaggggag agagctgcta gtgagatgac tgttttataa    4809

agaaatggaa aaaagtgaaa taaaaaatat gttgaatcag atttttaaa aggggtattt     4869
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gtttttttat aacaggtatt gaaacaagtt aacttgcatt cctatgtaag ataggagggg   4929

ctgaggggat ccccagtgtt tggaacataa gtcactatgc agactaataa acatcaacta   4989

gagagaaaaa aaaaaaa                                                  5006
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ctgcctgctt cttgctccag cacc atg gaa tgc ctg cgc agt tta ccc tgc       171
                           Met Glu Cys Leu Arg Ser Leu Pro Cys
                           1               5

ctc ctg ccc cgc gcg atg aga ctt ccc cgg cgg acg ctg tgt gcc ctg      219
Leu Leu Pro Arg Ala Met Arg Leu Pro Arg Arg Thr Leu Cys Ala Leu
10                  15                  20                  25

gcc ttg gac gtg acc tct gtg ggt cct ccc gtt gct gcc tgc ggc cgc      267
Ala Leu Asp Val Thr Ser Val Gly Pro Pro Val Ala Ala Cys Gly Arg
26                  31                  36                  41

cga gcc aac ctg att gga agg agc cga gcg gcg cag ctt tgc ggg ccc      315
Arg Ala Asn Leu Ile Gly Arg Ser Arg Ala Ala Gln Leu Cys Gly Pro
42                  47                  52                  57

gac cgg ctc cgc gtg gca ggt gaa gtg cac cgg ttt aga acc tct gac      363
Asp Arg Leu Arg Val Ala Gly Glu Val His Arg Phe Arg Thr Ser Asp
58                  63                  68                  73

gtc tct caa gcc act tta gcc agt gta gcc cca gta ttt act gtg aca      411
Val Ser Gln Ala Thr Leu Ala Ser Val Ala Pro Val Phe Thr Val Thr
74                  79                  84                  89

aaa ttt gac aaa cag gga aac gtt act tct ttt gaa agg aag aaa act      459
Lys Phe Asp Lys Gln Gly Asn Val Thr Ser Phe Glu Arg Lys Lys Thr
90                  95                  100                 105

gaa tta tac caa gag tta ggt ctt caa gcc aga gat ttg aga ttt cag      507
Glu Leu Tyr Gln Glu Leu Gly Leu Gln Ala Arg Asp Leu Arg Phe Gln
106                 111                 116                 121

cat gta atg agt atc aca gtc aga aac aat agg att atc atg aga atg      555
His Val Met Ser Ile Thr Val Arg Asn Asn Arg Ile Ile Met Arg Met
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10032520.010402

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122                     127                     132                     137

gag tat ttg aaa gct gtg ata act cca gag tgt ctt ctg ata tta gat        603
Glu Tyr Leu Lys Ala Val Ile Thr Pro Glu Cys Leu Leu Ile Leu Asp
138                     143                     148                     153

tat cgt aat tta aac tta gag caa tgg ctg ttc cgg gaa ctc cct tca        651
Tyr Arg Asn Leu Asn Leu Glu Gln Trp Leu Phe Arg Glu Leu Pro Ser
154                     159                     164                     169

cag ttg tct gga gag ggt caa ctc gtt aca tac cct tta cct ttt gag        699
Gln Leu Ser Gly Glu Gly Gln Leu Val Thr Tyr Pro Leu Pro Phe Glu
170                     175                     180                     185

ttt aga gct ata gaa gca ctc ctg caa tat tgg atc aac acc ctt cag        747
Phe Arg Ala Ile Glu Ala Leu Leu Gln Tyr Trp Ile Asn Thr Leu Gln
186                     191                     196                     201

ggg aaa ctt agc att ttg cag cca ctg atc ctt gag acc ttg gat gct        795
Gly Lys Leu Ser Ile Leu Gln Pro Leu Ile Leu Glu Thr Leu Asp Ala
202                     207                     212                     217

ttg gtg gac ccc aaa cat tct tct gta gac aga agc aaa ctg cac att        843
Leu Val Asp Pro Lys His Ser Ser Val Asp Arg Ser Lys Leu His Ile
218                     223                     228                     233

tta cta cag aat ggc aaa agt cta tca gag tta gaa aca gat att aaa        891
Leu Leu Gln Asn Gly Lys Ser Leu Ser Glu Leu Glu Thr Asp Ile Lys
234                     239                     244                     249

att ttc aaa gag tca att ttg gag atc ttg gat gag gaa gag ttg cta        939
Ile Phe Lys Glu Ser Ile Leu Glu Ile Leu Asp Glu Glu Glu Leu Leu
250                     255                     260                     265

gaa gag ctc tgt gta tca aaa tgg agt gac cca caa gtc ttt gaa aag        987
Glu Glu Leu Cys Val Ser Lys Trp Ser Asp Pro Gln Val Phe Glu Lys
266                     271                     276                     281

agc agt gct ggg att gac cat gca gaa gag atg gag ttg ctg ttg gaa       1035
Ser Ser Ala Gly Ile Asp His Ala Glu Glu Met Glu Leu Leu Leu Glu
282                     287                     292                     297

aac tac tac cga ttg gct gac gat ctc tcc aat gca gct cgt gag ctt       1083
Asn Tyr Tyr Arg Leu Ala Asp Asp Leu Ser Asn Ala Ala Arg Glu Leu
298                     303                     308                     313

agg gtg ctg att gat gat tca caa agt att att ttc att aat ctg gac       1131
Arg Val Leu Ile Asp Asp Ser Gln Ser Ile Ile Phe Ile Asn Leu Asp
314                     319                     324                     329

agc cac cga aac gtg atg atg agg ttg aat cta cag ctg acc atg gga       1179
Ser His Arg Asn Val Met Met Arg Leu Asn Leu Gln Leu Thr Met Gly
330                     335                     340                     345

acc ttc tct ctt tcg ctc ttt gga cta atg gga gtt gct ttt gga atg       1227
Thr Phe Ser Leu Ser Leu Phe Gly Leu Met Gly Val Ala Phe Gly Met
346                     351                     356                     361
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aat ttg gaa tct tcc ctt gaa gag gac cat aga att ttt tgg ctg att      1275
Asn Leu Glu Ser Ser Leu Glu Glu Asp His Arg Ile Phe Trp Leu Ile
362                 367                 372                 377

aca gga att atg ttc atg gga agt ggc ctc atc tgg agg cgc ctg ctt      1323
Thr Gly Ile Met Phe Met Gly Ser Gly Leu Ile Trp Arg Arg Leu Leu
378                 383                 388                 393

tca ttc ctt gga cga cag cta gaa gct cca ttg cct cct atg atg gct      1371
Ser Phe Leu Gly Arg Gln Leu Glu Ala Pro Leu Pro Pro Met Met Ala
394                 399                 404                 409

tct tta cct aaa aag act ctt ctg gca gat aga agc atg gaa ttg aaa      1419
Ser Leu Pro Lys Lys Thr Leu Leu Ala Asp Arg Ser Met Glu Leu Lys
410                 415                 420                 425

aat agc ctc aga ctg gat gga ctt gga tca gga agg agc atc cta aca      1467
Asn Ser Leu Arg Leu Asp Gly Leu Gly Ser Gly Arg Ser Ile Leu Thr
426                 431                 436                 441

aac cgt tag gaacagc cccgtggata ctgaagtttt ttttatggta gttacaggaa      1523
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442

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a                                                                    1584



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                     Met Glu Lys Leu Arg Arg Val Leu Ser Gly Gln
                      1               5

gac gac gag gag cag ggc ctg act gcg cag gtc ctg gat gcc tca tcc      159
Asp Asp Glu Glu Gln Gly Leu Thr Ala Gln Val Leu Asp Ala Ser Ser
 12                 17                  22                  27

ctt agt ttc aac acc aga ttg aaa tgg ttt gcc atc tgc ttc gta tgt      207
Leu Ser Phe Asn Thr Arg Leu Lys Trp Phe Ala Ile Cys Phe Val Cys
 28                 33                  38                  43

ggc gtt ttc ttt tct att ctt gga act gga ttg ctg tgg ctt ccg ggc      255
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Gly Val Phe Phe Ser Ile Leu Gly Thr Gly Leu Leu Trp Leu Pro Gly
 44                 49                  54                  59

ggc ata aag ctt ttt gca gtg ttt tat acc ctc ggc aat ctt gct gcg      303
Gly Ile Lys Leu Phe Ala Val Phe Tyr Thr Leu Gly Asn Leu Ala Ala
 60                 65                  70                  75

tta gcc agt aca tgc ttt tta atg gga cct gtg aag caa ctg aag aaa      351
Leu Ala Ser Thr Cys Phe Leu Met Gly Pro Val Lys Gln Leu Lys Lys
 76                 81                  86                  91

atg ttt gaa gca aca aga ttg ctt gca aca att gtt atg ctt ttg tgt      399
Met Phe Glu Ala Thr Arg Leu Leu Ala Thr Ile Val Met Leu Leu Cys
 92                 97                 102                 107

ttc ata ttt acc ctg tgt gct gct ctt tgg tgg cat aag aag gga ctg      447
Phe Ile Phe Thr Leu Cys Ala Ala Leu Trp Trp His Lys Lys Gly Leu
108                113                 118                 123

gct gtg tta ttc tgc ata ttg cag ttc ttg tca atg acc tgg tat agc      495
Ala Val Leu Phe Cys Ile Leu Gln Phe Leu Ser Met Thr Trp Tyr Ser
124                129                 134                 139

ctg tcg tac atc cca tat gca agg gat gca gtt att aaa tgc tgt tct      543
Leu Ser Tyr Ile Pro Tyr Ala Arg Asp Ala Val Ile Lys Cys Cys Ser
140                145                 150                 155

tct ctc cta agt tga aatcagaaa cttgtggaaa agagcacttg aatgttggta       598
Ser Leu Leu Ser  *
156

ctctatgttt ggtgaagttt gcttttcccc ataaaacact ccaggaacaa ctgacgtgac    658

agttgaagac cgttttgtac taagtctcat tttgtatact ggtaaaaact acatgcttga    718

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caaagcagct ttgaaatgtg aatatttaaa ggtagacctg tgctgcaaga taattaaact    898

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agggccttgg gagctgggca gtctgggctg ggctgggctg ggcagggcgc cac   atg      236
                                                             Met
                                                             1

gaa gct gga gga gca acg gga gcg ctg ggc gtg ggg tgc aaa ttg ccc       284
Glu Ala Gly Gly Ala Thr Gly Ala Leu Gly Val Gly Cys Lys Leu Pro
2               7                   12                  17

agt gcc ttc tgt ttc cca ggc agc tct gtg gcc atg gat atg ttc cag       332
Ser Ala Phe Cys Phe Pro Gly Ser Ser Val Ala Met Asp Met Phe Gln
18                  23                  28                  33

aag gta gag aag atc gga gag ggc acc tat ggg gtg gtg tac aag gcc       380
Lys Val Glu Lys Ile Gly Glu Gly Thr Tyr Gly Val Val Tyr Lys Ala
34                  39                  44                  49

aag aac agg gag aca ggg cag ctg gtg gcc ctg aag aag atc aga ctg       428
Lys Asn Arg Glu Thr Gly Gln Leu Val Ala Leu Lys Lys Ile Arg Leu
50                  55                  60                  65

gat ttg gag atg gag ggg gtc cca agc act gcc atc agg gag atc tcg       476
Asp Leu Glu Met Glu Gly Val Pro Ser Thr Ala Ile Arg Glu Ile Ser
66                  71                  76                  81

ctg ctc aag gaa ctg aag cac ccc aac atc gtc cga ctg ctg gac gtg       524
Leu Leu Lys Glu Leu Lys His Pro Asn Ile Val Arg Leu Leu Asp Val
82                  87                  92                  97

gtg cac aac gag agg aag ctc tat ctg gtg ttt gag ttc ctc agc cag       572
Val His Asn Glu Arg Lys Leu Tyr Leu Val Phe Glu Phe Leu Ser Gln
98                  103                 108                 113

gac ctg aag aag tac atg gac tcc acc cca ggc tca gag ctc ccc ctg       620
Asp Leu Lys Lys Tyr Met Asp Ser Thr Pro Gly Ser Glu Leu Pro Leu
114                 119                 124                 129

cac ctc atc aag agc tac ctc ttc cag ctg ctg cag ggg gtg agt ttc       668
His Leu Ile Lys Ser Tyr Leu Phe Gln Leu Leu Gln Gly Val Ser Phe
130                 135                 140                 145

tgc cac tca cat cgg gtc atc cac cga gac ctg aag ccc cag aac ctg       716
Cys His Ser His Arg Val Ile His Arg Asp Leu Lys Pro Gln Asn Leu
146                 151                 156                 161

ctc atc aat gag ttg ggt gcc atc aag ctg gct gac ttc ggc ctg gct       764
Leu Ile Asn Glu Leu Gly Ala Ile Lys Leu Ala Asp Phe Gly Leu Ala
162                 167                 172                 177
```

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cgc gcc ttc ggg gtg ccc ctg cgc acc tac acc cat gag gtg gtg aca       812
Arg Ala Phe Gly Val Pro Leu Arg Thr Tyr Thr His Glu Val Val Thr
178                 183                 188                 193

ctg tgg tat cgc gcc ccc gag att ctc ttg ggc agc aag ttc tat acc       860
Leu Trp Tyr Arg Ala Pro Glu Ile Leu Leu Gly Ser Lys Phe Tyr Thr
194                 199                 204                 209

aca gct gtg gat atc tgg agc att ggt tgc atc ttt gca gag atg gtg       908
Thr Ala Val Asp Ile Trp Ser Ile Gly Cys Ile Phe Ala Glu Met Val
210                 215                 220                 225

act cga aaa gcc ctg ttt cct ggt gac tct gag att gac cag ctc ttt       956
Thr Arg Lys Ala Leu Phe Pro Gly Asp Ser Glu Ile Asp Gln Leu Phe
226                 231                 236                 241

cgt atc ttt cgt atg ctg ggg aca ccc agc gaa gac aca tgg ccc ggg      1004
Arg Ile Phe Arg Met Leu Gly Thr Pro Ser Glu Asp Thr Trp Pro Gly
242                 247                 252                 257

gtc acc cag ctg cct gac tat aag ggc agc ttc cct aag tgg acc agg      1052
Val Thr Gln Leu Pro Asp Tyr Lys Gly Ser Phe Pro Lys Trp Thr Arg
258                 263                 268                 273

aag gga ctg gaa gag att gtg ccc aat ctg gag cca gag ggc agg gac      1100
Lys Gly Leu Glu Glu Ile Val Pro Asn Leu Glu Pro Glu Gly Arg Asp
274                 279                 284                 289

ctg ctc atg caa ctc ctg cag tat gac ccc agc cag cgg atc aca gcc      1148
Leu Leu Met Gln Leu Leu Gln Tyr Asp Pro Ser Gln Arg Ile Thr Ala
290                 295                 300                 305

aag act gcc ctg gcc cac ccg tac ttc tca tcc cct gag ccc tcc cca      1196
Lys Thr Ala Leu Ala His Pro Tyr Phe Ser Ser Pro Glu Pro Ser Pro
306                 311                 316                 321

gct gcc cgc cag tat gtg ctg cag cga ttc cgc cat tga gaatgtcaag       1245
Ala Ala Arg Gln Tyr Val Leu Gln Arg Phe Arg His  *
322                 327                 332

gccacactca gatcctttct cgagcagcag ctgctgcccc agctgcctcc tacccattgc    1305

caagagagga tgcatctggg gagagcaaag cactaaggaa ttcagcatca gcctgcagag    1365

ggctgagtct gggttagtcc tgcccgcagg ttagcgagat cctgtgttgt tttttgggtt    1425

ggacggtgcc gtttcaaaat agaggcacag atgctccatg cacgaggggt ccccgggcac    1485

tggaacaagt gccaagttga aggcaggggg cctgccagag ctgggtgtgg gtattcaggc    1545

cctcacctgc cctgcctgca gggccagacc ctgaggaaag ggcgcccccct gctggtcttt   1605

ttggatttaa aatgtttggg ggaagagttg agttccagtt cagtcccaag ttaaacagga    1665

gggagtgagg gagaggagag agggcgttcc ccggatccca ggagagctgg gctatgactg    1725

caataaggag ttgttccttc acctgagatg tgcttctttt ggttcatttc tggcttgaca    1785
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acaagaaata aacgtggtat gttcctgaaa aaaaaaaaa                          1825


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gagcaggaag ctgagtgaga ggttgcagaa aaagtgtctt cgctcggcag aggttacagg    180

tggcatctca gaaagagctt tgaggctaca ggctgtagtc gggaagggga tcggagaact    240

gtgtgaaggg acagcttagg gactagcgtc ctgggactag ggggaagttc gcgactttct    300

gaagactggc aggaatgtgc ctcctggccc tcgatgcttc ccccctgagg ggaggcatcg    360

tgagggactg tggcaggctt cactgaacgc tgagccgggg aggtccaact ccacgt        416
atg gat ccg ggg aat gag aat tca gcc aca gag gct gcc gcg atc ata      464
Met Asp Pro Gly Asn Glu Asn Ser Ala Thr Glu Ala Ala Ala Ile Ile
1               5                   10                  15

gac cta gat ccc gac ttc gaa ccc cag agc cgt ccc cgc tcc tgc acc      512
Asp Leu Asp Pro Asp Phe Glu Pro Gln Ser Arg Pro Arg Ser Cys Thr
17                  22                  27                  32

tgg ccc ctt ccc cga cca gag atc gct aac cag ccg tcc aag ccg ccc      560
Trp Pro Leu Pro Arg Pro Glu Ile Ala Asn Gln Pro Ser Lys Pro Pro
33                  38                  43                  48

gag gtg gag cca gat ctg ggg gaa aag gta cac acg gag ggg cgc tca      608
Glu Val Glu Pro Asp Leu Gly Glu Lys Val His Thr Glu Gly Arg Ser
49                  54                  59                  64

gag ccg atc ctg ttg ccc tct cgg ctc cca gag ccg gcc ggg gcc ccc      656
Glu Pro Ile Leu Leu Pro Ser Arg Leu Pro Glu Pro Ala Gly Ala Pro
65                  70                  75                  80

cag ccc gga atc ctg ggg gct gta aca ggt cct cgg aag gga ggc tcc      704
Gln Pro Gly Ile Leu Gly Ala Val Thr Gly Pro Arg Lys Gly Gly Ser
81                  86                  91                  96

cgc cgg aat gcc tgg gga aat cag tca tat gca gaa ctc atc agc cag      752
Arg Arg Asn Ala Trp Gly Asn Gln Ser Tyr Ala Glu Leu Ile Ser Gln
97                  102                 107                 112
```

```
gcc att gaa agc gcc ccg gag aag cga ctg aca ctt gcc cag atc tac      800
Ala Ile Glu Ser Ala Pro Glu Lys Arg Leu Thr Leu Ala Gln Ile Tyr
113                 118                 123                 128

gag tgg atg gtc cgt act gta ccc tac ttc aag gac aag ggt gac agc      848
Glu Trp Met Val Arg Thr Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser
129                 134                 139                 144

aac agc tca gca gga tgg aag aac tcg atc cgc cac aac ctg tcc ctg      896
Asn Ser Ser Ala Gly Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu
145                 150                 155                 160

cac agc aag ttc atc aag gtt cac aac gag gcc acc ggc aaa agc tct      944
His Ser Lys Phe Ile Lys Val His Asn Glu Ala Thr Gly Lys Ser Ser
161                 166                 171                 176

tgg tgg atg ctg aac cct gag gga ggc aag agc ggc aaa gcc ccc cgc      992
Trp Trp Met Leu Asn Pro Glu Gly Gly Lys Ser Gly Lys Ala Pro Arg
177                 182                 187                 192

cgc cgg gcc gcc tcc atg gat agc agc agc aag ctg ctc cgg ggc cgc     1040
Arg Arg Ala Ala Ser Met Asp Ser Ser Ser Lys Leu Leu Arg Gly Arg
193                 198                 203                 208

agt aaa gcc ccc aag aag aaa cca tct gtg ctg cca gct cca ccc gaa     1088
Ser Lys Ala Pro Lys Lys Lys Pro Ser Val Leu Pro Ala Pro Pro Glu
209                 214                 219                 224

ggt gcc act cca acg agc cct gtc ggc cac ttt gcc aag tgg tca ggc     1136
Gly Ala Thr Pro Thr Ser Pro Val Gly His Phe Ala Lys Trp Ser Gly
225                 230                 235                 240

agc ccc tgc tct cga aac cgt gaa gaa gcc gat atg tgg acc acc ttc     1184
Ser Pro Cys Ser Arg Asn Arg Glu Glu Ala Asp Met Trp Thr Thr Phe
241                 246                 251                 256

cgt cca cga agc agt tca aat gcc agc agt gtc agc acc cgg ctg tcc     1232
Arg Pro Arg Ser Ser Ser Asn Ala Ser Ser Val Ser Thr Arg Leu Ser
257                 262                 267                 272

ccc ttg agg cca gag tct gag gtg ctg gcg gag gaa ata cca gct tca     1280
Pro Leu Arg Pro Glu Ser Glu Val Leu Ala Glu Glu Ile Pro Ala Ser
273                 278                 283                 288

gtc agc agt tat gca ggg ggt gtc cct ccc acc ctc aat gaa ggt cta     1328
Val Ser Ser Tyr Ala Gly Gly Val Pro Pro Thr Leu Asn Glu Gly Leu
289                 294                 299                 304

gag ctg tta gat ggg ctc aat ctc acc tct tcc cat tcc ctg cta tct     1376
Glu Leu Leu Asp Gly Leu Asn Leu Thr Ser Ser His Ser Leu Leu Ser
305                 310                 315                 320

cgg agt ggt ctc tct ggc ttc tct ttg cag cat cct ggg gtt acc ggc     1424
Arg Ser Gly Leu Ser Gly Phe Ser Leu Gln His Pro Gly Val Thr Gly
321                 326                 331                 336

ccc tta cac acc tac agc agc tcc ctt ttc agc cca gca gag ggg ccc     1472
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Pro Leu His Thr Tyr Ser Ser Ser Leu Phe Ser Pro Ala Glu Gly Pro
337                 342                 347                 352

ctg tca gca gga gaa ggg tgc ttc tcc agc tcc cag gct ctg gag gcc      1520
Leu Ser Ala Gly Glu Gly Cys Phe Ser Ser Ser Gln Ala Leu Glu Ala
353                 358                 363                 368

ctg ctc acc tct gat acg cca cca ccc cct gct gac gtc ctc atg acc      1568
Leu Leu Thr Ser Asp Thr Pro Pro Pro Pro Ala Asp Val Leu Met Thr
369                 374                 379                 384

cag gta gat ccc att ctg tcc cag gct ccg act ctt ctg ttg ctg ggg      1616
Gln Val Asp Pro Ile Leu Ser Gln Ala Pro Thr Leu Leu Leu Leu Gly
385                 390                 395                 400

ggg ctt cct tcc tcc agt aag ctg gcc acg ggc gtc ggc ctg tgt ccc      1664
Gly Leu Pro Ser Ser Ser Lys Leu Ala Thr Gly Val Gly Leu Cys Pro
401                 406                 411                 416

aag ccc cta gag gct cca ggc ccc agc agt ctg gtt ccc acc ctt tct      1712
Lys Pro Leu Glu Ala Pro Gly Pro Ser Ser Leu Val Pro Thr Leu Ser
417                 422                 427                 432

atg ata gca cca cct cca gtc atg gca agt gcc ccc atc ccc aag gct      1760
Met Ile Ala Pro Pro Pro Val Met Ala Ser Ala Pro Ile Pro Lys Ala
433                 438                 443                 448

ctg ggg act cct gtg ctc aca ccc cct act gaa gct gca agc caa gac      1808
Leu Gly Thr Pro Val Leu Thr Pro Pro Thr Glu Ala Ala Ser Gln Asp
449                 454                 459                 464

aga atg cct cag gat cta gat ctt gat atg tat atg gag aac ctg gag      1856
Arg Met Pro Gln Asp Leu Asp Leu Asp Met Tyr Met Glu Asn Leu Glu
465                 470                 475                 480

tgt gac atg gat aac atc atc agt gac ctc atg gat gag ggc gag gga      1904
Cys Asp Met Asp Asn Ile Ile Ser Asp Leu Met Asp Glu Gly Glu Gly
481                 486                 491                 496

ctg gac ttc aac ttt gag cca gat ccc tga g tcatgcctgg aagctttgtc      1955
Leu Asp Phe Asn Phe Glu Pro Asp Pro  *
497                 502

ccctgcttca gatgtggagc caggcgtgtt catatctact ctttaccctt gagccctccc    2015

caggaatttg ggaccctgct ttagagctag ggtggggtct ggtcacacac aggtgttgaa    2075

gaaattataa agataaagct gccccatctg ggacgatat ggggagggag atgggagggg     2135

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tttataaact tttaaagaaa tataaacaca aatatagaga ttttttaacc atggcagggt   2555

gctagtggtg ggcagaatgc tttttttct ttctgaaggc tttgtgatag tgacatgata   2615

caaacactac agacaataaa tattaggaga cacagggaag tggggagagg tggggagtaa   2675

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cctgggagtg tgtggtgtta gggtgcagcc acagtcttct atgacccagc atgggttagt   2855

gctatggtgg gagagtacat tgaaggcctg gaattagctt ggggccaggg aagggactgg   2915

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ggggagcttg gctgagggtc tgggaaatga gcagggatgg ggggggatgt ggatcaggtt   3155

tactagcacc tgccagggag gccatctggg gctccttctc caccccagcc cccaaagcag   3215

cccttccccc agtgcccttt gcatcgtccc ctcccccacc cctgctgtgg gttcccatca   3275

tttcctgtgt cagcgcctgg cctacccaga ttgtatcatg tgctagattg gagtggggaa   3335

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gcggcagaa   atg atg gaa gaa ttg cat agc ctg gac cca cga cgg cag       168
            Met Met Glu Glu Leu His Ser Leu Asp Pro Arg Arg Gln
              1               5                  10

gaa tta ttg gag gcc agg ttt act gga gta ggt gtt agt aag gga cca       216
Glu Leu Leu Glu Ala Arg Phe Thr Gly Val Gly Val Ser Lys Gly Pro
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ctt aat agt gag tct tcc aac cag agc ttg tgc agc gtc gga tcc ttg      264
Leu Asn Ser Glu Ser Ser Asn Gln Ser Leu Cys Ser Val Gly Ser Leu
 30                  35                   40                   45

agt gat aaa gaa gta gag act ccc gag aaa aag cag aat gac cag cga      312
Ser Asp Lys Glu Val Glu Thr Pro Glu Lys Lys Gln Asn Asp Gln Arg
 46                  51                   56                   61

aat cgg aaa aga aaa gct gaa cca tat gaa act agc caa ggg aaa ggc      360
Asn Arg Lys Arg Lys Ala Glu Pro Tyr Glu Thr Ser Gln Gly Lys Gly
 62                  67                   72                   77

act cct agg gga cat aaa att agt gat tac ttt gag cga cga gta gaa      408
Thr Pro Arg Gly His Lys Ile Ser Asp Tyr Phe Glu Arg Arg Val Glu
 78                  83                   88                   93

cag ccc ctc tat ggt tta gat ggc agt gct gca aag gag gca acg gag      456
Gln Pro Leu Tyr Gly Leu Asp Gly Ser Ala Ala Lys Glu Ala Thr Glu
 94                  99                  104                  109

gag cag tct gct ctg cca acc ctc atg tca gtg atg cta gca aaa cct      504
Glu Gln Ser Ala Leu Pro Thr Leu Met Ser Val Met Leu Ala Lys Pro
110                 115                  120                  125

cgg ctt gac aca gag cag ctg gcg caa agg gga gct ggc ctc tgc ttc      552
Arg Leu Asp Thr Glu Gln Leu Ala Gln Arg Gly Ala Gly Leu Cys Phe
126                 131                  136                  141

act ttt gtt tca gct cag caa aac agt ccc tca tct acg gga tct ggc      600
Thr Phe Val Ser Ala Gln Gln Asn Ser Pro Ser Ser Thr Gly Ser Gly
142                 147                  152                  157

aac aca gag cat tcc tgc agc tcc caa aaa cag atc tcc atc cag cac      648
Asn Thr Glu His Ser Cys Ser Ser Gln Lys Gln Ile Ser Ile Gln His
158                 163                  168                  173

aga cag acc cag tcc gac ctc aca ata gaa aaa ata tct gca cta gaa      696
Arg Gln Thr Gln Ser Asp Leu Thr Ile Glu Lys Ile Ser Ala Leu Glu
174                 179                  184                  189

aac agt aag aat tct gac tta gag aag aag gag gga aga ata gat gat      744
Asn Ser Lys Asn Ser Asp Leu Glu Lys Lys Glu Gly Arg Ile Asp Asp
190                 195                  200                  205

tta tta aga gcc aac tgt gat ttg aga cgg cag att gat gaa cag caa      792
Leu Leu Arg Ala Asn Cys Asp Leu Arg Arg Gln Ile Asp Glu Gln Gln
206                 211                  216                  221

aag atg cta gag aaa tac aag gaa cga tta aat aga tgt gtg aca atg      840
Lys Met Leu Glu Lys Tyr Lys Glu Arg Leu Asn Arg Cys Val Thr Met
222                 227                  232                  237

agc aag aaa ctc ctt ata gaa aag tca aaa caa gag aag atg gcg tgt      888
Ser Lys Lys Leu Leu Ile Glu Lys Ser Lys Gln Glu Lys Met Ala Cys
238                 243                  248                  253
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aga gat aag agc atg caa gac cgc ttg aga ctg ggc cac ttt act act       936
Arg Asp Lys Ser Met Gln Asp Arg Leu Arg Leu Gly His Phe Thr Thr
254                 259                 264                 269

gtc cga cac gga gcc tca ttt act gaa cag tgg aca gat ggt tat gct       984
Val Arg His Gly Ala Ser Phe Thr Glu Gln Trp Thr Asp Gly Tyr Ala
270                 275                 280                 285

ttt cag aat ctt atc aag caa cag gaa agg ata aat tca cag agg gaa      1032
Phe Gln Asn Leu Ile Lys Gln Gln Glu Arg Ile Asn Ser Gln Arg Glu
286                 291                 296                 301

gag ata gaa aga caa cgg aaa atg tta gca aag cgg aaa cct cct gcc      1080
Glu Ile Glu Arg Gln Arg Lys Met Leu Ala Lys Arg Lys Pro Pro Ala
302                 307                 312                 317

atg ggt cag gcc cct cct gca acc aat gag cag aaa cag cgg aaa agc      1128
Met Gly Gln Ala Pro Pro Ala Thr Asn Glu Gln Lys Gln Arg Lys Ser
318                 323                 328                 333

aag acc aat gga gct gaa aat gaa acg tta acg tta gca gaa tac cat      1176
Lys Thr Asn Gly Ala Glu Asn Glu Thr Leu Thr Leu Ala Glu Tyr His
334                 339                 344                 349

gaa caa gaa gaa atc ttc aaa ctc aga tta ggt cat ctt aaa aag gag      1224
Glu Gln Glu Glu Ile Phe Lys Leu Arg Leu Gly His Leu Lys Lys Glu
350                 355                 360                 365

gaa gca gag atc cag gca gag ctg gag aga cta gaa agg gtt aga aat      1272
Glu Ala Glu Ile Gln Ala Glu Leu Glu Arg Leu Glu Arg Val Arg Asn
366                 371                 376                 381

cta cat atc agg gaa cta aaa agg ata cat aat gaa gat aat tca caa      1320
Leu His Ile Arg Glu Leu Lys Arg Ile His Asn Glu Asp Asn Ser Gln
382                 387                 392                 397

ttt aaa gat cat cca acg cta aat gac aga tat ttg ttg tta cat ctt      1368
Phe Lys Asp His Pro Thr Leu Asn Asp Arg Tyr Leu Leu Leu His Leu
398                 403                 408                 413

ttg ggt aga gga ggt ttc agt gaa gtt tac aag gca ttt gat cta aca      1416
Leu Gly Arg Gly Gly Phe Ser Glu Val Tyr Lys Ala Phe Asp Leu Thr
414                 419                 424                 429

gag caa aga tac gta gct gtg aaa att cac cag tta aat aaa aac tgg      1464
Glu Gln Arg Tyr Val Ala Val Lys Ile His Gln Leu Asn Lys Asn Trp
430                 435                 440                 445

aga gat gag aaa aag gag aat tac cac aag cat gca tgt agg gaa tac      1512
Arg Asp Glu Lys Lys Glu Asn Tyr His Lys His Ala Cys Arg Glu Tyr
446                 451                 456                 461

cgg att cat aaa gag ctg gat cat ccc aga ata gtt aag ctg tat gat      1560
Arg Ile His Lys Glu Leu Asp His Pro Arg Ile Val Lys Leu Tyr Asp
462                 467                 472                 477
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tac ttt tca ctg gat act gac tcg ttt tgt aca gta tta gaa tac tgt      1608
Tyr Phe Ser Leu Asp Thr Asp Ser Phe Cys Thr Val Leu Glu Tyr Cys
478                 483                 488                 493

gag gga aat gat ctg gac ttc tac ctg aaa cag cac aaa tta atg tcg      1656
Glu Gly Asn Asp Leu Asp Phe Tyr Leu Lys Gln His Lys Leu Met Ser
494                 499                 504                 509

gag aaa gag gcc cgg tcc att atc atg cag att gtg aat gct tta aag      1704
Glu Lys Glu Ala Arg Ser Ile Ile Met Gln Ile Val Asn Ala Leu Lys
510                 515                 520                 525

tac tta aat gaa ata aaa cct ccc atc ata cac tat gac ctc aaa cca      1752
Tyr Leu Asn Glu Ile Lys Pro Pro Ile Ile His Tyr Asp Leu Lys Pro
526                 531                 536                 541

ggt aat att ctt tta gta aat ggt aca gcg tgt gga gag ata aaa att      1800
Gly Asn Ile Leu Leu Val Asn Gly Thr Ala Cys Gly Glu Ile Lys Ile
542                 547                 552                 557

aca gat ttt ggt ctt tcg aag atc atg gat gat gat agc tac aat tca      1848
Thr Asp Phe Gly Leu Ser Lys Ile Met Asp Asp Asp Ser Tyr Asn Ser
558                 563                 568                 573

gtg gat ggc atg gag cta aca tca caa ggt gct ggt act tat tgg tat      1896
Val Asp Gly Met Glu Leu Thr Ser Gln Gly Ala Gly Thr Tyr Trp Tyr
574                 579                 584                 589

tta cca ccg gag tgt ttt gtg gtt ggg aaa gaa cca cca aag atc tca      1944
Leu Pro Pro Glu Cys Phe Val Val Gly Lys Glu Pro Pro Lys Ile Ser
590                 595                 600                 605

aat aaa gtt gat gtg tgg tcg gtg ggt gtg atc ttc tat cag tgt ctt      1992
Asn Lys Val Asp Val Trp Ser Val Gly Val Ile Phe Tyr Gln Cys Leu
606                 611                 616                 621

tat gga agg aag cct ttt ggc cat aac cag tct cag caa gac atc cta      2040
Tyr Gly Arg Lys Pro Phe Gly His Asn Gln Ser Gln Gln Asp Ile Leu
622                 627                 632                 637

caa gag aat acg att ctt aaa gct act gaa gtg cag ttc ccg cca aag      2088
Gln Glu Asn Thr Ile Leu Lys Ala Thr Glu Val Gln Phe Pro Pro Lys
638                 643                 648                 653

cca gta gta aca cct gaa gca aag gcg ttt att cga cga tgc ttg gcc      2136
Pro Val Val Thr Pro Glu Ala Lys Ala Phe Ile Arg Arg Cys Leu Ala
654                 659                 664                 669

tac cga aag gag gac cgc att gat gtc cag cag ctg gcc tgt gat ccc      2184
Tyr Arg Lys Glu Asp Arg Ile Asp Val Gln Gln Leu Ala Cys Asp Pro
670                 675                 680                 685

tac ttg ttg cct cac atc cga aag tca gtc tct aca agt agc cct gct      2232
Tyr Leu Leu Pro His Ile Arg Lys Ser Val Ser Thr Ser Ser Pro Ala
686                 691                 696                 701

gga gct gct att gca tca acc tct ggg gcg tcc aat aac agt tct tct      2280
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Gly Ala Ala Ile Ala Ser Thr Ser Gly Ala Ser Asn Asn Ser Ser Ser
702 707 712 717

aat tga gactgactcc aaggccacaa actgttcaac acacacaaag tggacaaatg 2336
Asn *
718

gcgttcagca gcgggtttgg aacatagcga atccgaatgg atctgatgaa acctgtacca 2396

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ggctcagctg gggatggtgt ttgacttcgg aggaaaaaag ttgctattgc ccgttaaagg 2816

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gtacgtggca atgttcattc caatcagatg cagctttctc ctccgtctgg tctcctgttt 2996

gcaattgctt ccctcatctc agtagggaaa aaattgagtg ggagtactga gatgtgtggg 3056

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ctattttttt aaataaaggt tcatctgtcc atgcagtcct cttggattct ctgaatgtag 3236

taactatgaa gctatgccaa aggtaggcag aaaatgggct tgggagccag acactccagg 3296

gatcagtagt tcctacccat agtctttgtg tgcttgctaa atggtgtaca tttcttgtta 3356

accacgttat taaaacttga tcagcacata aaaaaaaaaa aa 3398

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Met Leu Thr Leu Glu Phe Gly Ile Leu Glu Phe Asp Pro Ser Trp Ile
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ggc agc tgg aca cag agg tcg tgg gtg agc tgg agg agc agg ccc gga       156
Gly Ser Trp Thr Gln Arg Ser Trp Val Ser Trp Arg Ser Arg Pro Gly
 17                 22                  27                  32

tgt gag ctg ttc tcc ata gtg gtg ttc ggc tcc atc gtg aac gag ggc       204
Cys Glu Leu Phe Ser Ile Val Val Phe Gly Ser Ile Val Asn Glu Gly
 33                 38                  43                  48

tac ctc aac agc gcc tcc gag ggg gag gag ttc tgc atc tac aac cgc       252
Tyr Leu Asn Ser Ala Ser Glu Gly Glu Glu Phe Cys Ile Tyr Asn Arg
 49                 54                  59                  64

aac ccc aac gcc tgc agc tat ggc gtg gcc gtg ggc gtg ctc gcc ttc       300
Asn Pro Asn Ala Cys Ser Tyr Gly Val Ala Val Gly Val Leu Ala Phe
 65                 70                  75                  80

ctc acc tgc ctg ctg tac ctg gcc ctg gac gtg tac ttc ccg cag atc       348
Leu Thr Cys Leu Leu Tyr Leu Ala Leu Asp Val Tyr Phe Pro Gln Ile
 81                 86                  91                  96

agc agc gtc aag gac cgc aag aaa gcc gtc ctg tcc gac atc ggt gtc       396
Ser Ser Val Lys Asp Arg Lys Lys Ala Val Leu Ser Asp Ile Gly Val
 97                102                 107                 112

tcg gcc ttc tgg gct ttc ctc tgg ttc gtg gga ttc tgc tac ctg gcc       444
Ser Ala Phe Trp Ala Phe Leu Trp Phe Val Gly Phe Cys Tyr Leu Ala
113                118                 123                 128

aac cag tgg cag gtc tcc aag ccc aag gac aac cca ctg aac gaa ggg       492
Asn Gln Trp Gln Val Ser Lys Pro Lys Asp Asn Pro Leu Asn Glu Gly
129                134                 139                 144

acg gac gca gcc cgg gcc gcc atc gcc ttc tcc ttt ttc tcc atc ttc       540
Thr Asp Ala Ala Arg Ala Ala Ile Ala Phe Ser Phe Phe Ser Ile Phe
145                150                 155                 160

acc tgg agc ctg acc gca gcc ctg gcc gtg cgg aga ttc aag gac cta       588
Thr Trp Ser Leu Thr Ala Ala Leu Ala Val Arg Arg Phe Lys Asp Leu
161                166                 171                 176

agc ttc cag gag gag tac agc aca ctg ttc cct gcc tcg gca cag ccg       636
Ser Phe Gln Glu Glu Tyr Ser Thr Leu Phe Pro Ala Ser Ala Gln Pro
177                182                 187                 192

tag gcct ccccggcttg cagaggccgg cagccctgta tcacccctgg cagtgaggtg       693
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193

gcaggagcag cctagtgcca gaaatgtcca agatgccagg gcatgcaggg cagtggaagg     753

ctggcttgag gaaccaattc aggttctcca ctgactcatt cattccttca ccgcctcctt     813
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                                     Met Glu Gly Gly Ala Tyr Gly
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gcg ggc aaa gcc ggg ggc gcc ttc gac ccc tac acc ctg gtc cgg cag      161
Ala Gly Lys Ala Gly Gly Ala Phe Asp Pro Tyr Thr Leu Val Arg Gln
  8                  13                  18                  23

ccg cac acc atc ctg cgc gtc gtg tct tgg ctg ttc tcc ata gtg gtg      209
Pro His Thr Ile Leu Arg Val Val Ser Trp Leu Phe Ser Ile Val Val
 24                  29                  34                  39

ttc ggc tcc atc gtg aac gag ggc tac ctc aac agc gcc tcc gag ggg      257
Phe Gly Ser Ile Val Asn Glu Gly Tyr Leu Asn Ser Ala Ser Glu Gly
 40                  45                  50                  55

gag gag ttc tgc atc tac aac cgc aac ccc aac gcc tgc agc tat ggc      305
Glu Glu Phe Cys Ile Tyr Asn Arg Asn Pro Asn Ala Cys Ser Tyr Gly
 56                  61                  66                  71

gtg gcc gtg ggc gtg ctc gcc ttc ctc acc tgc ctg ctg tac ctg gcc      353
Val Ala Val Gly Val Leu Ala Phe Leu Thr Cys Leu Leu Tyr Leu Ala
 72                  77                  82                  87

ctg gac gtg tac ttc ccg cag atc agc agc gtc aag gac cgc aag aaa      401
Leu Asp Val Tyr Phe Pro Gln Ile Ser Ser Val Lys Asp Arg Lys Lys
 88                  93                  98                 103

gcc gtc ctg tcc gac atc ggt gtc tcg gcc ttc tgg gct ttc ctc tgg      449
Ala Val Leu Ser Asp Ile Gly Val Ser Ala Phe Trp Ala Phe Leu Trp
104                 109                 114                 119

ttc gtg gga ttc tgc tac ctg gcc aac cag tgg cag gtc tcc aag ccc      497
Phe Val Gly Phe Cys Tyr Leu Ala Asn Gln Trp Gln Val Ser Lys Pro
120                 125                 130                 135

aag gac aac cca ctg aac gaa ggg acg gac gca gcc cgg gcc gcc atc      545
Lys Asp Asn Pro Leu Asn Glu Gly Thr Asp Ala Ala Arg Ala Ala Ile
136                 141                 146                 151
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gcc ttc tcc ttt ttc tcc atc ttc acc tgg agc ctg acc gca gcc ctg 593
Ala Phe Ser Phe Phe Ser Ile Phe Thr Trp Ser Leu Thr Ala Ala Leu
152 157 162 167

gcc gtg cgg aga ttc aag gac cta agc ttc cag gag gag tac agc aca 641
Ala Val Arg Arg Phe Lys Asp Leu Ser Phe Gln Glu Glu Tyr Ser Thr
168 173 178 183

ctg ttc cct gcc tcg gca cag ccg tag gcctc cccggcttgc agaggccggc 693
Leu Phe Pro Ala Ser Ala Gln Pro *
184 189

agccctgtat cacccctggc agtgaggtgg caggagcagc ctagtgccag aaatgtccaa 753

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Met Leu Thr Leu Glu Phe Gly Ile Leu Glu Phe Asp Pro Ser Trp Ile
  1               5                  10                  15

ggc agc tgg aca cag agg tcg tgg ctg ttc tcc ata gtg gtg ttc ggc      156
Gly Ser Trp Thr Gln Arg Ser Trp Leu Phe Ser Ile Val Val Phe Gly
 17                  22                  27                  32

tcc atc gtg aac gag ggc tac ctc aac agc gcc tcc gag ggg gag gag      204
Ser Ile Val Asn Glu Gly Tyr Leu Asn Ser Ala Ser Glu Gly Glu Glu
 33                  38                  43                  48

ttc tgc atc tac aac cgc aac ccc aac gcc tgc agc tat ggc gtg gcc      252
Phe Cys Ile Tyr Asn Arg Asn Pro Asn Ala Cys Ser Tyr Gly Val Ala
 49                  54                  59                  64

gtg ggc gtg ctc gcc ttc ctc acc tgc ctg ctg tac ctg gcc ctg gac      300
Val Gly Val Leu Ala Phe Leu Thr Cys Leu Leu Tyr Leu Ala Leu Asp
 65                  70                  75                  80

gtg tac ttc ccg cag atc agc agc gtc aag gac cgc aag aaa gcc gtc      348
Val Tyr Phe Pro Gln Ile Ser Ser Val Lys Asp Arg Lys Lys Ala Val
 81                  86                  91                  96

ctg tcc gac atc ggt gtc tcg gcc ttc tgg gct ttc ctc tgg ttc gtg      396
Leu Ser Asp Ile Gly Val Ser Ala Phe Trp Ala Phe Leu Trp Phe Val
 97                 102                 107                 112

gga ttc tgc tac ctg gcc aac cag tgg cag gtc tcc aag ccc aag gac      444
Gly Phe Cys Tyr Leu Ala Asn Gln Trp Gln Val Ser Lys Pro Lys Asp
113                 118                 123                 128

aac cca ctg aac gaa ggg acg gac gca gcc cgg gcc gcc atc gcc ttc      492
Asn Pro Leu Asn Glu Gly Thr Asp Ala Ala Arg Ala Ala Ile Ala Phe
129                 134                 139                 144

tcc ttt ttc tcc atc ttc acc tgg agc ctg acc gca gcc ctg gcc gtg      540
Ser Phe Phe Ser Ile Phe Thr Trp Ser Leu Thr Ala Ala Leu Ala Val
145                 150                 155                 160

cgg aga ttc aag gac cta agc ttc cag gag gag tac agc aca ctg ttc      588
Arg Arg Phe Lys Asp Leu Ser Phe Gln Glu Glu Tyr Ser Thr Leu Phe
161                 166                 171                 176

cct gcc tcg gca cag ccg tag gc ctcccc ggct tgcagaggcc ggcagccctg      641
Pro Ala Ser Ala Gln Pro  *
177                 182

tatcacccct ggcagtgagg tggcaggagc agcctagtgc cagaaatgtc caagatgcca      701

gggcatgcag ggcagtggaa ggctggcttg aggaaccaat tcaggttctc cactgactca      761

ttcattcctt caccgcctcc ttcattgatt cttcatgcgt tcattcattc agtaaacatt      821

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ggtcgtcaga cccgctgccc ttggcggtcg aagtcgtcgt gcgggcccgc ggcggccgcc     180

c   atg gag aag gcc agg aga ggc ggg gat ggc gtc ccc cgg ggg ccc       226
    Met Glu Lys Ala Arg Arg Gly Gly Asp Gly Val Pro Arg Gly Pro
      1               5                  10

gta ctg cac atc gtg gtg gtc gga ttt cac cac aag aag ggc tgc cag       274
Val Leu His Ile Val Val Val Gly Phe His His Lys Lys Gly Cys Gln
 16                 21                  26                  31

gtt gaa ttc tct tac ccg ccc ctg att cca gga gat gga cat gac agc       322
Val Glu Phe Ser Tyr Pro Pro Leu Ile Pro Gly Asp Gly His Asp Ser
 32                 37                  42                  47

cac act tta cct gaa gaa tgg aag tat ttg ccc ttc ctt gcc tta cca       370
His Thr Leu Pro Glu Glu Trp Lys Tyr Leu Pro Phe Leu Ala Leu Pro
 48                 53                  58                  63

gat ggc gca cac aac tac cag gaa gat act gtg ttt ttt cac ttg cca       418
Asp Gly Ala His Asn Tyr Gln Glu Asp Thr Val Phe Phe His Leu Pro
 64                 69                  74                  79

ccc aga aat gga aat gga gcc aca gta ttt ggt atc tct tgc tat cga       466
Pro Arg Asn Gly Asn Gly Ala Thr Val Phe Gly Ile Ser Cys Tyr Arg
 80                 85                  90                  95

caa att gaa gcc aag gca ctg aaa gta agg caa gca gat atc acc aga       514
Gln Ile Glu Ala Lys Ala Leu Lys Val Arg Gln Ala Asp Ile Thr Arg
 96                 101                 106                 111

gag act gtt cag aaa agt gtc tgt gtt cta agc aag ctg cct ctg tat       562
Glu Thr Val Gln Lys Ser Val Cys Val Leu Ser Lys Leu Pro Leu Tyr
112                 117                 122                 127

ggt tta ctt caa gca aaa ctt caa ctc att aca cat gca tat ttt gaa       610
Gly Leu Leu Gln Ala Lys Leu Gln Leu Ile Thr His Ala Tyr Phe Glu
128                 133                 138                 143

gag aag gat ttt tcc caa att tct att cta aag gag ctt tat gaa cat       658
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Glu Lys Asp Phe Ser Gln Ile Ser Ile Leu Lys Glu Leu Tyr Glu His
144                 149                 154                 159

atg aat agt tcc ttg gga ggt gct tca tta gaa gga tcc caa gta tat       706
Met Asn Ser Ser Leu Gly Gly Ala Ser Leu Glu Gly Ser Gln Val Tyr
160                 165                 170                 175

ctt ggt ctg tca cct cga gat ctt gtc ctt cat ttt cga cac aag gtc       754
Leu Gly Leu Ser Pro Arg Asp Leu Val Leu His Phe Arg His Lys Val
176                 181                 186                 191

tta atc cta ttt aag cta att ctt ctt gaa aaa aag gtt ctt ttt tat       802
Leu Ile Leu Phe Lys Leu Ile Leu Leu Glu Lys Lys Val Leu Phe Tyr
192                 197                 202                 207

att tct cca gtg aat aaa ttg gtg ggt gca ctg atg act gtg tta tcc       850
Ile Ser Pro Val Asn Lys Leu Val Gly Ala Leu Met Thr Val Leu Ser
208                 213                 218                 223

ctt ttt cca ggc atg att gaa cat ggt ctc agt gac tgt tct cag tat       898
Leu Phe Pro Gly Met Ile Glu His Gly Leu Ser Asp Cys Ser Gln Tyr
224                 229                 234                 239

aga ccc cgg aaa agt atg tct gaa gat ggt ggg ctt cag gaa agt aac       946
Arg Pro Arg Lys Ser Met Ser Glu Asp Gly Gly Leu Gln Glu Ser Asn
240                 245                 250                 255

cca tgt gca gat gat ttt gtt tct gca tcc act gct gat gtt tca cat       994
Pro Cys Ala Asp Asp Phe Val Ser Ala Ser Thr Ala Asp Val Ser His
256                 261                 266                 271

acc aac ttg gga act atc agg aaa gtc atg gca gga aac cat gga gaa      1042
Thr Asn Leu Gly Thr Ile Arg Lys Val Met Ala Gly Asn His Gly Glu
272                 277                 282                 287

gat gct gcc atg aag act gag gag cct ttg ttc caa gtg gaa gac agc      1090
Asp Ala Ala Met Lys Thr Glu Glu Pro Leu Phe Gln Val Glu Asp Ser
288                 293                 298                 303

agc aaa ggg cag gaa ccc aat gat acc aat caa tat ttg aaa cct cca      1138
Ser Lys Gly Gln Glu Pro Asn Asp Thr Asn Gln Tyr Leu Lys Pro Pro
304                 309                 314                 319

tct cgc cca tct cca gat tct tca gaa agt gac tgg gaa act ttg gat      1186
Ser Arg Pro Ser Pro Asp Ser Ser Glu Ser Asp Trp Glu Thr Leu Asp
320                 325                 330                 335

cct agt gtc tta gag gac ccc aac ttg aaa gaa agg gaa cag ctg gga      1234
Pro Ser Val Leu Glu Asp Pro Asn Leu Lys Glu Arg Glu Gln Leu Gly
336                 341                 346                 351

tca gac cag aca aat ttg ttt cca aag gac tct gtc ccc tca gag agt      1282
Ser Asp Gln Thr Asn Leu Phe Pro Lys Asp Ser Val Pro Ser Glu Ser
352                 357                 362                 367

ctt cca att act gta caa cct caa gct aat acg gga cag gta gtc ctg      1330
Leu Pro Ile Thr Val Gln Pro Gln Ala Asn Thr Gly Gln Val Val Leu
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ata cca ggg ctc att tcg ggt ttg gaa gag gat cag tat ggc atg ccc      1378
Ile Pro Gly Leu Ile Ser Gly Leu Glu Glu Asp Gln Tyr Gly Met Pro
384                 389                 394                 399

ctg gcc atc ttc aca aag gga tat ctg tgt ttg cct tac atg gca ttg      1426
Leu Ala Ile Phe Thr Lys Gly Tyr Leu Cys Leu Pro Tyr Met Ala Leu
400                 405                 410                 415

cag cag cat cat ctt ctc tcc gat gtc acc gtt cgg ggg ttt gtt gct      1474
Gln Gln His His Leu Leu Ser Asp Val Thr Val Arg Gly Phe Val Ala
416                 421                 426                 431

gga gct act aac atc ctt ttt cga caa cag aaa cac ctc agt gat gcc      1522
Gly Ala Thr Asn Ile Leu Phe Arg Gln Gln Lys His Leu Ser Asp Ala
432                 437                 442                 447

att gtg gaa gta gaa gaa gct ctg atc cag atc cat gat cca gaa ctc      1570
Ile Val Glu Val Glu Glu Ala Leu Ile Gln Ile His Asp Pro Glu Leu
448                 453                 458                 463

agg aag ctg ctt aac cca acc act gca gac cta agg ttc gca gac tac      1618
Arg Lys Leu Leu Asn Pro Thr Thr Ala Asp Leu Arg Phe Ala Asp Tyr
464                 469                 474                 479

cta gtg agg cac gtg act gag aat cgg gat gac gtc ttc cta gat ggc      1666
Leu Val Arg His Val Thr Glu Asn Arg Asp Asp Val Phe Leu Asp Gly
480                 485                 490                 495

acg ggc tgg gag gga ggt gac gaa tgg atc cgg gcc cag ttt gcg gtc      1714
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496                 501                 506                 511

tac att cat gcc ctg ctg gct gcc acg ctg caa tta gtt ctg ttc aga      1762
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512                 517                 522                 527

ata gtg aac gtg gca aaa aaa att gga aac gtc atg gtc aca act agc      1810
Ile Val Asn Val Ala Lys Lys Ile Gly Asn Val Met Val Thr Thr Ser
528                 533                 538                 543

cgg aat gtt gta caa aca gga aaa gct gtt ggc cag tca gtt gga gga      1858
Arg Asn Val Val Gln Thr Gly Lys Ala Val Gly Gln Ser Val Gly Gly
544                 549                 554                 559

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Thr Thr Ser Thr Ser Gln Ser Leu Thr Glu Pro Pro Asp Glu Lys Pro
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592
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tctgaagagt gcagctgcct gaaccgagcc ctgccgaaca gctgagaatt gcactgcaac     180

c    atg agt gag aac aat aag aat tcc ttg gag agc agc cta cgg caa      226
     Met Ser Glu Asn Asn Lys Asn Ser Leu Glu Ser Ser Leu Arg Gln
       1               5                  10

cta aaa tgc cat ttc acc tgg aac ttg atg gag gga gaa aac tcc ttg      274
Leu Lys Cys His Phe Thr Trp Asn Leu Met Glu Gly Glu Asn Ser Leu
 16                 21                  26                  31

gat gat ttt gaa gac aaa gta ttt tac cgg act gag ttt cag aat cgt      322
Asp Asp Phe Glu Asp Lys Val Phe Tyr Arg Thr Glu Phe Gln Asn Arg
 32                 37                  42                  47

gaa ttc aaa gcc aca atg tgc aac cta ctg gcc tat cta aag cac ctc      370
Glu Phe Lys Ala Thr Met Cys Asn Leu Leu Ala Tyr Leu Lys His Leu
 48                 53                  58                  63

aaa ggg caa aac gag gca gcc ctg gaa tgc tta cgt aaa gct gaa gag      418
Lys Gly Gln Asn Glu Ala Ala Leu Glu Cys Leu Arg Lys Ala Glu Glu
 64                 69                  74                  79

tta atc cag caa gag cat gct gac cag gca gaa atc aga agt ctg gtc      466
Leu Ile Gln Gln Glu His Ala Asp Gln Ala Glu Ile Arg Ser Leu Val
 80                 85                  90                  95

acc tgg gga aac tat gcc tgg gtc tac tat cac atg ggc cga ctc tca      514
Thr Trp Gly Asn Tyr Ala Trp Val Tyr Tyr His Met Gly Arg Leu Ser
 96                101                 106                 111

gac gtt cag att tat gta gac aag gtg aaa cat gtc tgt gag aag ttt      562
Asp Val Gln Ile Tyr Val Asp Lys Val Lys His Val Cys Glu Lys Phe
112                117                 122                 127

tcc agt ccc tat aga att gag agt cca gag ctt gac tgt gag gaa ggg      610
Ser Ser Pro Tyr Arg Ile Glu Ser Pro Glu Leu Asp Cys Glu Glu Gly
128                133                 138                 143

tgg aca cgg tta aag tgt gga gga aac caa aat gaa aga gcg aag gtg      658
Trp Thr Arg Leu Lys Cys Gly Gly Asn Gln Asn Glu Arg Ala Lys Val
144                149                 154                 159

tgc ttt gag aag gct ctg gaa aag aag cca aag aac cca gaa ttc acc      706
Cys Phe Glu Lys Ala Leu Glu Lys Lys Pro Lys Asn Pro Glu Phe Thr
160                165                 170                 175

tct gga ctg gca ata gca agc tac cgt ctg gac aac tgg cca cca tct      754
Ser Gly Leu Ala Ile Ala Ser Tyr Arg Leu Asp Asn Trp Pro Pro Ser
176                181                 186                 191
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cag aac gcc att gac cct ctg agg caa gcc att cgg ctg aat cct gac 802
Gln Asn Ala Ile Asp Pro Leu Arg Gln Ala Ile Arg Leu Asn Pro Asp
192 197 202 207

aac cag tac ctt aaa gtc ctc ctg gct ctg aag ctt cat aag atg cgt 850
Asn Gln Tyr Leu Lys Val Leu Leu Ala Leu Lys Leu His Lys Met Arg
208 213 218 223

gaa gaa ggt gaa gag gaa ggt gaa gga gag aag tta gtt gaa gaa gcc 898
Glu Glu Gly Glu Glu Glu Gly Glu Gly Glu Lys Leu Val Glu Glu Ala
224 229 234 239

ttg gag aaa gcc cca ggt gta aca gat gtt ctt cgc agt gca gcc aag 946
Leu Glu Lys Ala Pro Gly Val Thr Asp Val Leu Arg Ser Ala Ala Lys
240 245 250 255

ttt tat cga aga aaa gat gag cca gac aaa gcg att gaa ctg ctt aaa 994
Phe Tyr Arg Arg Lys Asp Glu Pro Asp Lys Ala Ile Glu Leu Leu Lys
256 261 266 271

aag gct tta gaa tac ata cca aac aat gcc tac ctg cat tgc caa att 1042
Lys Ala Leu Glu Tyr Ile Pro Asn Asn Ala Tyr Leu His Cys Gln Ile
272 277 282 287

ggg tgc tgc tat agg gca aaa gtc ttc caa gta atg aat cta aga gag 1090
Gly Cys Cys Tyr Arg Ala Lys Val Phe Gln Val Met Asn Leu Arg Glu
288 293 298 303

aat gga atg tat ggg aaa aga aag tta ctg gaa cta ata gga cac gct 1138
Asn Gly Met Tyr Gly Lys Arg Lys Leu Leu Glu Leu Ile Gly His Ala
304 309 314 319

gtg gct cat ctg aag aaa gct gat gag gcc aat gat aat ctc ttc cgt 1186
Val Ala His Leu Lys Lys Ala Asp Glu Ala Asn Asp Asn Leu Phe Arg
320 325 330 335

gtc tgt tcc att ctt gcc agc ctc cat gct cta gca gat cag tat gaa 1234
Val Cys Ser Ile Leu Ala Ser Leu His Ala Leu Ala Asp Gln Tyr Glu
336 341 346 351

gac gca gag tat tac ttc caa aag gaa ttc agt aaa gag ctt act cct 1282
Asp Ala Glu Tyr Tyr Phe Gln Lys Glu Phe Ser Lys Glu Leu Thr Pro
352 357 362 367

gta gcg aaa caa ctg ctc cat ctg cgg tat ggc aac tgt cag ctg tac 1330
Val Ala Lys Gln Leu Leu His Leu Arg Tyr Gly Asn Cys Gln Leu Tyr
368 373 378 383

caa atg aag tgt gaa gac aag gcc atc cac cac ttt ata gag ggt gta 1378
Gln Met Lys Cys Glu Asp Lys Ala Ile His His Phe Ile Glu Gly Val
384 389 394 399

aaa ata aac cag aaa tca agg gag aaa gaa aag atg aaa gac aaa ctg 1426
Lys Ile Asn Gln Lys Ser Arg Glu Lys Glu Lys Met Lys Asp Lys Leu
400 405 410 415

caa aaa att gcc aaa atg cga ctt tct aaa aat gga gca gat tct gag 1474

Gln Lys Ile Ala Lys Met Arg Leu Ser Lys Asn Gly Ala Asp Ser Glu
416 421 426 431

gct ttg cat gtc ttg gca ttc ctt cag gag ctg aat gaa aaa atg caa 1522
Ala Leu His Val Leu Ala Phe Leu Gln Glu Leu Asn Glu Lys Met Gln
432 437 442 447

caa gca gat gaa gac tct gag agg ggt ttg gag tct gga agc ctc atc 1570
Gln Ala Asp Glu Asp Ser Glu Arg Gly Leu Glu Ser Gly Ser Leu Ile
448 453 458 463

cct tca gca tca agc tgg aat ggg gaa tga a gaatagagat gtggtgccca 1621
Pro Ser Ala Ser Ser Trp Asn Gly Glu *
464 469

ctaggctact gctgaaaggg agctgaaatt cctccaccaa gttggtattc aaaatatgta 1681

atgactggta tggcaaaaga ttggactaag acactggcca taccactgga cagggttatg 1741

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gcccaggtct ccctccgcag ccctgactcg cgcacacgct gagcttttgc tcactcccct 120

tcgcgcggac acagacacac gcatattcac acacccagac acacaccccg ctgtaca 177
atg gca gaa tcc cac ctg cag tca tcc ctc atc aca gcc tca cag ttt 225
Met Ala Glu Ser His Leu Gln Ser Ser Leu Ile Thr Ala Ser Gln Phe
1 5 10 15

ttc gag atc tgg ctc cat ttc gac gct gac gga agt ggt tac ctg gaa 273
Phe Glu Ile Trp Leu His Phe Asp Ala Asp Gly Ser Gly Tyr Leu Glu
17 22 27 32

gga aag gag ctg cag aac ttg atc cag gag ctc cag cag gcg cga aag 321
Gly Lys Glu Leu Gln Asn Leu Ile Gln Glu Leu Gln Gln Ala Arg Lys
33 38 43 48

aag gct gga ttg gag tta tca cct gaa atg aaa act ttt gtg gat cag 369
Lys Ala Gly Leu Glu Leu Ser Pro Glu Met Lys Thr Phe Val Asp Gln
49 54 59 64

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tat ggg caa aga gat gat gga aaa ata gga att gta gag ttg gct cac        417
Tyr Gly Gln Arg Asp Asp Gly Lys Ile Gly Ile Val Glu Leu Ala His
 65                  70                  75                  80

gta tta ccc aca gaa gag aat ttc ctg ctg ctc ttc cga tgc cag cag        465
Val Leu Pro Thr Glu Glu Asn Phe Leu Leu Leu Phe Arg Cys Gln Gln
 81                  86                  91                  96

ctg aag tcc tgt gag gaa ttc atg aag aca tgg aga aaa tat gat act        513
Leu Lys Ser Cys Glu Glu Phe Met Lys Thr Trp Arg Lys Tyr Asp Thr
 97                 102                 107                 112

gac cac agt ggc ttc ata gaa act gag gag ctt aag aac ttt cta aag        561
Asp His Ser Gly Phe Ile Glu Thr Glu Glu Leu Lys Asn Phe Leu Lys
113                 118                 123                 128

gac ctg cta gaa aaa gca aac aag act gtt gat gac aca aaa tta gcc        609
Asp Leu Leu Glu Lys Ala Asn Lys Thr Val Asp Asp Thr Lys Leu Ala
129                 134                 139                 144

gag tat aca gac cta atg ctg aaa cta ttt gat tca aat aat gat ggg        657
Glu Tyr Thr Asp Leu Met Leu Lys Leu Phe Asp Ser Asn Asn Asp Gly
145                 150                 155                 160

aag ctg gaa tta act gag atg gcc agg tta cta cca gtg cag gag aat        705
Lys Leu Glu Leu Thr Glu Met Ala Arg Leu Leu Pro Val Gln Glu Asn
161                 166                 171                 176

ttt ctt ctt aaa ttc cag gga atc aaa atg tgt ggg aaa gag ttc aat        753
Phe Leu Leu Lys Phe Gln Gly Ile Lys Met Cys Gly Lys Glu Phe Asn
177                 182                 187                 192

aag gct ttt gag ctg tat gat cag gac ggc aat gga tac ata gat gaa        801
Lys Ala Phe Glu Leu Tyr Asp Gln Asp Gly Asn Gly Tyr Ile Asp Glu
193                 198                 203                 208

aat gaa ctg gat gct tta ctg aag gat ctg tgc gag aag aat aaa cag        849
Asn Glu Leu Asp Ala Leu Leu Lys Asp Leu Cys Glu Lys Asn Lys Gln
209                 214                 219                 224

gat ctg gat att aat aat att aca aca tac aag aag aac ata atg gct        897
Asp Leu Asp Ile Asn Asn Ile Thr Thr Tyr Lys Lys Asn Ile Met Ala
225                 230                 235                 240

ttg tcg gat gga ggg aag ctg tac cga acg gat ctt gct ctt att ctc        945
Leu Ser Asp Gly Gly Lys Leu Tyr Arg Thr Asp Leu Ala Leu Ile Leu
241                 246                 251                 256

tgt gct ggg gat aac tag agttgg tggccgcaac cacttgctag tgatacactg        999
Cys Ala Gly Asp Asn  *
257                 262

tatctaaaaa ataactgtgc actataaggg agtaggctgt atttctttt atatctgtaa      1059

atttaactgc atatagataa ttatccagga tgtgtggctc attcttttca gcttgtttct      1119

atactgtttg taatatacag tttttgtaac catatgattg aaaagaagaa agtctatgct      1179
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ggaggatgga gcccagagag ggaatgtggg tgatgaggtt gggccaggcc cctaaacccc     180

aagccccaga ggcccactcc agtgcccccc acaggatctg gagagctgct ggagaacacc     240

atg gag gcc atg gag aac tcc atg gcc cag cgc tcg gac ctc ctg gag       288
Met Glu Ala Met Glu Asn Ser Met Ala Gln Arg Ser Asp Leu Leu Glu
 1               5                  10                  15

ctc gac tgt cag ctg aca cgg gac aga gtg gtg gtg gtg tca cat gat       336
Leu Asp Cys Gln Leu Thr Arg Asp Arg Val Val Val Val Ser His Asp
 17                 22                  27                  32

gag aac ctg tgc cgc cag tcg ggc cta aac agg gat gtg ggc agc ctg       384
Glu Asn Leu Cys Arg Gln Ser Gly Leu Asn Arg Asp Val Gly Ser Leu
 33                 38                  43                  48

gac ttc gag gac ctg ccc ctc tac aag gag aag ctg gag gtt tac ttc       432
Asp Phe Glu Asp Leu Pro Leu Tyr Lys Glu Lys Leu Glu Val Tyr Phe
 49                 54                  59                  64

tct cca ggc cac ttt gct cac ggg tca gac cgg cgc atg gtt cgt ctg       480
Ser Pro Gly His Phe Ala His Gly Ser Asp Arg Arg Met Val Arg Leu
 65                 70                  75                  80

gag gac ctg ttc cag agg ttt cca agg aca ccc atg agc gta gag atc       528
Glu Asp Leu Phe Gln Arg Phe Pro Arg Thr Pro Met Ser Val Glu Ile
 81                 86                  91                  96

aaa ggg aag aac gaa gag ctc atc cgt gag ata gca ggc ttg gtg aga       576
Lys Gly Lys Asn Glu Glu Leu Ile Arg Glu Ile Ala Gly Leu Val Arg
 97                 102                 107                 112

cgc tat gac cgt aat gaa atc acc atc tgg gcc tcg gag aag agc tcg       624
Arg Tyr Asp Arg Asn Glu Ile Thr Ile Trp Ala Ser Glu Lys Ser Ser
113                 118                 123                 128

gtc atg aag aaa tgc aag gct gcc tct ctc tct gtc gcc cag gct gga       672
Val Met Lys Lys Cys Lys Ala Ala Ser Leu Ser Val Ala Gln Ala Gly
129                 134                 139                 144

gtg cgg tgg tgc gac ctc ggc tca ctg caa cct ctg cct cct ggg ttc       720
Val Arg Trp Cys Asp Leu Gly Ser Leu Gln Pro Leu Pro Pro Gly Phe
145                 150                 155                 160

aag cga ttc tca tgc ttc agc ctc ccg agt agc tgg gat tac aga acc       768
Lys Arg Phe Ser Cys Phe Ser Leu Pro Ser Ser Trp Asp Tyr Arg Thr
161                 166                 171                 176

ccg aga tgc ccc tgt cct tca caa taa gccga ggattctggg tgctgctttc       820
Pro Arg Cys Pro Cys Pro Ser Gln  *
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177                182

ctactacctg gggctgctgc ccttcatccc aatccctgag aagttcttct tctgcttcct    880

gcccaacatc atcaacagga cctatttccc attttcctgc tcttgcctga accagttaat    940

tggctgtggt ttcgaaatgg ctgatcatga ggaagagtct gatccgacac ttggaggagc   1000

gaggggtgca ggtgaggccg tgaccaccac ttccaccgca cacagacctg gcagcagggt   1060

tccggtccca ctctgctgcc aactagctgc atcactcggg caggtggtct tttggtgcct   1120

taatgaagag tcggattttg aagcagcctt cagcgtggga gccactggcg tcataacgga   1180

ttatcccaca gccctgcggc actacctgga caaccatgga ccagctgccc ggacctccta   1240

agtccagaag cctcgaggtc tcctgtttct cttcctgaaa aataaatatt tgcctttcaa   1300

aaaaaaaaaa a                                                        1311



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tgggagcctc ctagggtgag ggaaattaag agctttcaga gga atg agg cga ctg    175
                                                Met Arg Arg Leu
                                                1

att tgc aaa cgg atc tgt gat tat aaa agc ttc gat gat gaa gaa tca      223
Ile Cys Lys Arg Ile Cys Asp Tyr Lys Ser Phe Asp Asp Glu Glu Ser
 5                  10                  15                  20

gtg gat gga aat agg cca tca tca gct gca tca gcc ttc aag gtt cct      271
Val Asp Gly Asn Arg Pro Ser Ser Ala Ala Ser Ala Phe Lys Val Pro
21                  26                  31                  36

gca cct aaa aca tcc gga aat cct gcc aac agt gca agg aag cct ggt      319
Ala Pro Lys Thr Ser Gly Asn Pro Ala Asn Ser Ala Arg Lys Pro Gly
37                  42                  47                  52

tca gca ggt ggc cct aag gtt gga gca ggt gct tct aag gaa gga ggt      367
Ser Ala Gly Gly Pro Lys Val Gly Ala Gly Ala Ser Lys Glu Gly Gly
53                  58                  63                  68
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gct gga gca gtt gat gaa gat gat ttt ata aaa gct ttt aca gat gtc        415
Ala Gly Ala Val Asp Glu Asp Asp Phe Ile Lys Ala Phe Thr Asp Val
 69                 74                  79                  84

cct tct att cag att tat tct agt cga gaa ctc gaa gaa aca tta aat        463
Pro Ser Ile Gln Ile Tyr Ser Ser Arg Glu Leu Glu Glu Thr Leu Asn
 85                 90                  95                 100

aaa atc agg gaa att ttg tca gat gat aaa cat gac tgg gat cag cgt        511
Lys Ile Arg Glu Ile Leu Ser Asp Asp Lys His Asp Trp Asp Gln Arg
101                106                 111                 116

gcc aat gca ctg aag aaa att cga tca ctg ctt gtt gct gga gct gca        559
Ala Asn Ala Leu Lys Lys Ile Arg Ser Leu Leu Val Ala Gly Ala Ala
117                122                 127                 132

cag tat gat tgc ttt ttt caa cat tta cga ttg ttg gat gga gca ctt        607
Gln Tyr Asp Cys Phe Phe Gln His Leu Arg Leu Leu Asp Gly Ala Leu
133                138                 143                 148

aaa ctt tca gct aag gat ctt aga tcc cag gtg gtt aga gaa gct tgt        655
Lys Leu Ser Ala Lys Asp Leu Arg Ser Gln Val Val Arg Glu Ala Cys
149                154                 159                 164

att act gta gcc cac ctt tca aca gtt ttg gga aac aag ttt gat cat        703
Ile Thr Val Ala His Leu Ser Thr Val Leu Gly Asn Lys Phe Asp His
165                170                 175                 180

ggc gct gaa gcc att gta cct aca ctt ttt aat ctc gtc ccc aat agt        751
Gly Ala Glu Ala Ile Val Pro Thr Leu Phe Asn Leu Val Pro Asn Ser
181                186                 191                 196

gca aaa gtc atg gca act tct gga tgt gca gca atc aga ttt atc att        799
Ala Lys Val Met Ala Thr Ser Gly Cys Ala Ala Ile Arg Phe Ile Ile
197                202                 207                 212

cgg cat act cat gta ccc aga ctt ata cct tta ata aca agc aat tgc        847
Arg His Thr His Val Pro Arg Leu Ile Pro Leu Ile Thr Ser Asn Cys
213                218                 223                 228

aca tca aaa tca gtt ccc gtg agg aga cgt tca ttt gaa ttt tta gat        895
Thr Ser Lys Ser Val Pro Val Arg Arg Arg Ser Phe Glu Phe Leu Asp
229                234                 239                 244

tta ttg ttg caa gag tgg cag act cat tca ttg gaa aga cat gca gcc        943
Leu Leu Leu Gln Glu Trp Gln Thr His Ser Leu Glu Arg His Ala Ala
245                250                 255                 260

gtc ttg gtt gaa act att aaa aag gga att cat gat gct gac gct gag        991
Val Leu Val Glu Thr Ile Lys Lys Gly Ile His Asp Ala Asp Ala Glu
261                266                 271                 276

gcc aga gtg gag gca aga aag aca tac atg ggt ctt aga aac cac ttt       1039
Ala Arg Val Glu Ala Arg Lys Thr Tyr Met Gly Leu Arg Asn His Phe
277                282                 287                 292

cct ggt gaa gct gaa aca tta tat aat tcc ctt gag cca tct tat cag       1087
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Pro Gly Glu Ala Glu Thr Leu Tyr Asn Ser Leu Glu Pro Ser Tyr Gln
293 298 303 308

aag agt ctt caa act tac tta aag agt tct ggc agt gta gca tct ctt 1135
Lys Ser Leu Gln Thr Tyr Leu Lys Ser Ser Gly Ser Val Ala Ser Leu
309 314 319 324

cca caa tca gac agg tcc tca tcc agc tca cag gaa agt ctc aat cgc 1183
Pro Gln Ser Asp Arg Ser Ser Ser Ser Ser Gln Glu Ser Leu Asn Arg
325 330 335 340

cct ttt tct tcc aaa tgg tct aca gca aat cca tca act gtg gct gga 1231
Pro Phe Ser Ser Lys Trp Ser Thr Ala Asn Pro Ser Thr Val Ala Gly
341 346 351 356

aga gta tca gca ggc agc agc aaa gcc agt tcc ctt cca gga agc ctg 1279
Arg Val Ser Ala Gly Ser Ser Lys Ala Ser Ser Leu Pro Gly Ser Leu
357 362 367 372

cag cgt tca cga agt gac att gat gtg aat gct gct gca ggt gcc aag 1327
Gln Arg Ser Arg Ser Asp Ile Asp Val Asn Ala Ala Ala Gly Ala Lys
373 378 383 388

gca cat cat gct gct gga cag tct gtg cga agc ggg cgc tta ggt gca 1375
Ala His His Ala Ala Gly Gln Ser Val Arg Ser Gly Arg Leu Gly Ala
389 394 399 404

ggt gcc ctg aat gca ggt tcc tat gcg tca cta gag gat act tct gac 1423
Gly Ala Leu Asn Ala Gly Ser Tyr Ala Ser Leu Glu Asp Thr Ser Asp
405 410 415 420

aag ctg gat gga aca gca tct gaa gat ggc cgg gtg aga gca aaa ctt 1471
Lys Leu Asp Gly Thr Ala Ser Glu Asp Gly Arg Val Arg Ala Lys Leu
421 426 431 436

tca gca cca ctt gct ggc atg gga aat gcc aag gca gat tct aga gga 1519
Ser Ala Pro Leu Ala Gly Met Gly Asn Ala Lys Ala Asp Ser Arg Gly
437 442 447 452

aga agt cga aca aaa atg gtg tct caa tca cag cct ggt agc cgg tct 1567
Arg Ser Arg Thr Lys Met Val Ser Gln Ser Gln Pro Gly Ser Arg Ser
453 458 463 468

ggg tct cca gga aga gtt ctg acc aca aca gcc ctg tcc act gtg agc 1615
Gly Ser Pro Gly Arg Val Leu Thr Thr Thr Ala Leu Ser Thr Val Ser
469 474 479 484

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Ser Gly Val Gln Arg Val Leu Val Asn Ser Ala Ser Ala Gln Lys Arg
485 490 495 500

agc aag ata cca cgg agc cag ggc tgt agc aga gag gct agt cca tct 1711
Ser Lys Ile Pro Arg Ser Gln Gly Cys Ser Arg Glu Ala Ser Pro Ser
501 506 511 516

agg ctt tca gtg gcc cga agc agt cgt att cct cga cca agt gtg agt 1759
Arg Leu Ser Val Ala Arg Ser Ser Arg Ile Pro Arg Pro Ser Val Ser

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517                    522                   527                   532

caa gga tgc agc cgg gaa gct agt cgg gag agc agc aga gac aca agt      1807
Gln Gly Cys Ser Arg Glu Ala Ser Arg Glu Ser Ser Arg Asp Thr Ser
533                 538                 543                 548

cct gtt cgc tct ttt cag ccc ctc gcc tcc aga cac cat tcc aga tca      1855
Pro Val Arg Ser Phe Gln Pro Leu Ala Ser Arg His His Ser Arg Ser
549                 554                 559                 564

act ggt gcc ctc tac gcc ccc gaa gtg tat ggg gcc tca ggt cca ggt      1903
Thr Gly Ala Leu Tyr Ala Pro Glu Val Tyr Gly Ala Ser Gly Pro Gly
565                 570                 575                 580

tat ggg atc agc caa tca agt cga ctg tcg tct tct gtt agt gcc atg      1951
Tyr Gly Ile Ser Gln Ser Ser Arg Leu Ser Ser Ser Val Ser Ala Met
581                 586                 591                 596

cga gtc ctg aac aca ggt tct gat gtg gag gag gcg gtg gca gat gcc      1999
Arg Val Leu Asn Thr Gly Ser Asp Val Glu Glu Ala Val Ala Asp Ala
597                 602                 607                 612

ttg ctc tta gga gac ata cgg act aag aaa aaa cca gct cga aga aga      2047
Leu Leu Leu Gly Asp Ile Arg Thr Lys Lys Lys Pro Ala Arg Arg Arg
613                 618                 623                 628

tat gaa tca tat gga atg cat tca gat gat gac gcc aac agc gat gca      2095
Tyr Glu Ser Tyr Gly Met His Ser Asp Asp Asp Ala Asn Ser Asp Ala
629                 634                 639                 644

tct agt gct tgt tca gaa cgc tcc tat agt tct cga aat ggt agt att      2143
Ser Ser Ala Cys Ser Glu Arg Ser Tyr Ser Ser Arg Asn Gly Ser Ile
645                 650                 655                 660

cct aca tat atg agg cag acg gaa gat gtg gca gaa gtc ctc aat aga      2191
Pro Thr Tyr Met Arg Gln Thr Glu Asp Val Ala Glu Val Leu Asn Arg
661                 666                 671                 676

tgt gct agt tcc aat tgg tca gaa agg aaa gaa ggc ctc cta ggt ctg      2239
Cys Ala Ser Ser Asn Trp Ser Glu Arg Lys Glu Gly Leu Leu Gly Leu
677                 682                 687                 692

cag aac tta tta aaa aat cag aga aca cta agt cga gtt gaa ctg aaa      2287
Gln Asn Leu Leu Lys Asn Gln Arg Thr Leu Ser Arg Val Glu Leu Lys
693                 698                 703                 708

aga tta tgt gaa att ttc aca aga atg ttt gct gac cct cat ggc aag      2335
Arg Leu Cys Glu Ile Phe Thr Arg Met Phe Ala Asp Pro His Gly Lys
709                 714                 719                 724

aga gta ttc agc atg ttt ttg gag act cta gtg gat ttc ata caa gtc      2383
Arg Val Phe Ser Met Phe Leu Glu Thr Leu Val Asp Phe Ile Gln Val
725                 730                 735                 740

cac aaa gat gat ctt caa gat tgg ttg ttt gta ctg ctg aca caa cta      2431
His Lys Asp Asp Leu Gln Asp Trp Leu Phe Val Leu Leu Thr Gln Leu
741                 746                 751                 756
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cta aaa aaa atg ggt gct gat ttg ctt gga tct gtt cag gca aaa gtt      2479
Leu Lys Lys Met Gly Ala Asp Leu Leu Gly Ser Val Gln Ala Lys Val
757                 762                 767                 772

cag aaa gcc ctt gat gtt aca aga gag tct ttt cca aat gat ctt cag      2527
Gln Lys Ala Leu Asp Val Thr Arg Glu Ser Phe Pro Asn Asp Leu Gln
773                 778                 783                 788

ttc aat att cta atg aga ttt aca gtt gat cag acc cag aca cca agc      2575
Phe Asn Ile Leu Met Arg Phe Thr Val Asp Gln Thr Gln Thr Pro Ser
789                 794                 799                 804

tta aag gtg aag gtt gct atc ctt aaa tac ata gaa act ctg gcc aaa      2623
Leu Lys Val Lys Val Ala Ile Leu Lys Tyr Ile Glu Thr Leu Ala Lys
805                 810                 815                 820

cag atg gat cca gga gat ttt ata aat tcc agt gaa act cgc cta gca      2671
Gln Met Asp Pro Gly Asp Phe Ile Asn Ser Ser Glu Thr Arg Leu Ala
821                 826                 831                 836

gtg tct cgg gtc atc act tgg aca aca gaa ccc aaa agt tct gat gtt      2719
Val Ser Arg Val Ile Thr Trp Thr Thr Glu Pro Lys Ser Ser Asp Val
837                 842                 847                 852

cgg aag gca gca cag tca gtg ctg att tca tta ttt gaa ctc aat acc      2767
Arg Lys Ala Ala Gln Ser Val Leu Ile Ser Leu Phe Glu Leu Asn Thr
853                 858                 863                 868

cca gag ttt aca atg tta tta gga gct tta cca aaa act ttt cag gat      2815
Pro Glu Phe Thr Met Leu Leu Gly Ala Leu Pro Lys Thr Phe Gln Asp
869                 874                 879                 884

ggt gct acc aag ctt ctt cat aat cac ctt cga aac act ggc aat gga      2863
Gly Ala Thr Lys Leu Leu His Asn His Leu Arg Asn Thr Gly Asn Gly
885                 890                 895                 900

acc cag agt tcc atg ggg agt cct ttg aca aga cca aca cca cga tca      2911
Thr Gln Ser Ser Met Gly Ser Pro Leu Thr Arg Pro Thr Pro Arg Ser
901                 906                 911                 916

cca gct aac tgg tcc agt cct ctt act tct cct acc aat aca tca cag      2959
Pro Ala Asn Trp Ser Ser Pro Leu Thr Ser Pro Thr Asn Thr Ser Gln
917                 922                 927                 932

aat act tta tct cca agt gca ttt gat tat gac aca gaa aat atg aac      3007
Asn Thr Leu Ser Pro Ser Ala Phe Asp Tyr Asp Thr Glu Asn Met Asn
933                 938                 943                 948

tct gaa gat att tat agc tct ctt aga ggt gtc act gaa gca atc cag      3055
Ser Glu Asp Ile Tyr Ser Ser Leu Arg Gly Val Thr Glu Ala Ile Gln
949                 954                 959                 964

aat ttc agc ttc cgt agc caa gaa gat atg aat gag cca ttg aaa agg      3103
Asn Phe Ser Phe Arg Ser Gln Glu Asp Met Asn Glu Pro Leu Lys Arg
965                 970                 975                 980
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gat tct aaa aaa gat gat ggc gat tca atg tgt ggt ggt cct ggg atg      3151
Asp Ser Lys Lys Asp Asp Gly Asp Ser Met Cys Gly Gly Pro Gly Met
981                 986                 991                 996

tct gac cca aga gca gga ggt gat gct act gac tca agt caa aca gct      3199
Ser Asp Pro Arg Ala Gly Gly Asp Ala Thr Asp Ser Ser Gln Thr Ala
997                1002                1007                1012

ctt gat aat aaa gct tca ttg ctc cat tca atg cct act cac tcc tct      3247
Leu Asp Asn Lys Ala Ser Leu Leu His Ser Met Pro Thr His Ser Ser
1013               1018                1023                1028

cca cgc tct cga gac tat aat cca tat aac tat tca gat agc atc agt      3295
Pro Arg Ser Arg Asp Tyr Asn Pro Tyr Asn Tyr Ser Asp Ser Ile Ser
1029               1034                1039                1044

ccc ttc aac aag tct gcc ctc aag gaa gcc atg ttt gat gat gat gct      3343
Pro Phe Asn Lys Ser Ala Leu Lys Glu Ala Met Phe Asp Asp Asp Ala
1045               1050                1055                1060

gac cag ttt cct gac gat ctt tcc cta gat cat tct gac cta gtt gca      3391
Asp Gln Phe Pro Asp Asp Leu Ser Leu Asp His Ser Asp Leu Val Ala
1061               1066                1071                1076

gag ttg ttg aag gag ctg tct aac cat aat gag cgt gta gaa gaa aga      3439
Glu Leu Leu Lys Glu Leu Ser Asn His Asn Glu Arg Val Glu Glu Arg
1077               1082                1087                1092

aaa att gcc ctc tat gaa ctt atg aaa ctg aca cag gaa gaa tct ttt      3487
Lys Ile Ala Leu Tyr Glu Leu Met Lys Leu Thr Gln Glu Glu Ser Phe
1093               1098                1103                1108

agt gtt tgg gat gaa cac ttc aaa aca ata ttg ctt tta ttg ctt gaa      3535
Ser Val Trp Asp Glu His Phe Lys Thr Ile Leu Leu Leu Leu Leu Glu
1109               1114                1119                1124

acg ctt gga gat aaa gag cct aca atc agg gct ttg gca tta aag gtt      3583
Thr Leu Gly Asp Lys Glu Pro Thr Ile Arg Ala Leu Ala Leu Lys Val
1125               1130                1135                1140

tta aga gaa atc cta agg cat caa cca gca aga ttt aaa aac tat gca      3631
Leu Arg Glu Ile Leu Arg His Gln Pro Ala Arg Phe Lys Asn Tyr Ala
1141               1146                1151                1156

gaa ttg act gtc atg aaa aca ttg gaa gca cat aaa gat cct cat aag      3679
Glu Leu Thr Val Met Lys Thr Leu Glu Ala His Lys Asp Pro His Lys
1157               1162                1167                1172

gag gtg gtg aga tct gct gag gaa gcg gca tca gtg ttg gcc act tca      3727
Glu Val Val Arg Ser Ala Glu Glu Ala Ala Ser Val Leu Ala Thr Ser
1173               1178                1183                1188

att agt cca gag cag tgc atc aaa gtg ctt tgt cct atc att caa act      3775
Ile Ser Pro Glu Gln Cys Ile Lys Val Leu Cys Pro Ile Ile Gln Thr
1189               1194                1199                1204

gca gac tac cca att aat ctg gct gca atc aaa atg caa aca aaa gtg      3823
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 Ala Asp Tyr Pro Ile Asn Leu Ala Ala Ile Lys Met Gln Thr Lys Val
1205                1210                1215                1220

 ata gag aga gtg tcc aag gaa acc cta aac ctg ctt ttg cca gag att      3871
 Ile Glu Arg Val Ser Lys Glu Thr Leu Asn Leu Leu Leu Pro Glu Ile
1221                1226                1231                1236

 atg cca ggt cta ata cag ggt tat gat aat tca gag agc agt gtt cgg      3919
 Met Pro Gly Leu Ile Gln Gly Tyr Asp Asn Ser Glu Ser Ser Val Arg
1237                1242                1247                1252

 aaa gct tgt gtc ttc tgc ctg gtg gct gtt cat gcg gta att ggt gat      3967
 Lys Ala Cys Val Phe Cys Leu Val Ala Val His Ala Val Ile Gly Asp
1253                1258                1263                1268

 gaa cta aaa cca cat ctc agt caa ctt act ggc agt aaa atg aag cta      4015
 Glu Leu Lys Pro His Leu Ser Gln Leu Thr Gly Ser Lys Met Lys Leu
1269                1274                1279                1284

 ctg aat ctt tac atc aaa cgt gca caa aca ggt tct gga gga gct gat      4063
 Leu Asn Leu Tyr Ile Lys Arg Ala Gln Thr Gly Ser Gly Gly Ala Asp
1285                1290                1295                1300

 ccc act act gat gtt tct gga caa agt tag t gaagctcatc acagcgaacc      4114
 Pro Thr Thr Asp Val Ser Gly Gln Ser  *
1301                1306

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acatcctttg gaacttacta ttgtttccca gttttagttt tttgtttcgt ttcgttttgt    4234

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tgggagcctc ctagggtgag ggaaattaag agctttcaga gga atg agg cga ctg      175
                                                Met Arg Arg Leu
                                                1

att tgc aaa cgg atc tgt gat tat aaa agc ttc gat gat gaa gaa tca      223
Ile Cys Lys Arg Ile Cys Asp Tyr Lys Ser Phe Asp Asp Glu Glu Ser
5                   10                  15                  20

gtg gat gga aat agg cca tca tca gct gca tca gcc ttc aag gtt cct      271
Val Asp Gly Asn Arg Pro Ser Ser Ala Ala Ser Ala Phe Lys Val Pro
21                  26                  31                  36

gca cct aaa aca tcc gga aat cct gcc aac agt gca agg aag cct ggt      319
Ala Pro Lys Thr Ser Gly Asn Pro Ala Asn Ser Ala Arg Lys Pro Gly
37                  42                  47                  52

tca gca ggt ggc cct aag gtt gga gca ggt gct tct aag gaa gga ggt      367
Ser Ala Gly Gly Pro Lys Val Gly Ala Gly Ala Ser Lys Glu Gly Gly
53                  58                  63                  68

gct gga gca gtt gat gaa gat gat ttt ata aaa gct ttt aca gat gtc      415
Ala Gly Ala Val Asp Glu Asp Asp Phe Ile Lys Ala Phe Thr Asp Val
69                  74                  79                  84

cct tct att cag att tat tct agt cga gaa ctc gaa gaa aca tta aat      463
Pro Ser Ile Gln Ile Tyr Ser Ser Arg Glu Leu Glu Glu Thr Leu Asn
85                  90                  95                  100

aaa atc agg gaa att ttg tca gat gat aaa cat gac tgg gat cag cgt      511
Lys Ile Arg Glu Ile Leu Ser Asp Asp Lys His Asp Trp Asp Gln Arg
101                 106                 111                 116

gcc aat gca ctg aag aaa att cga tca ctg ctt gtt gct gga gct gca      559
Ala Asn Ala Leu Lys Lys Ile Arg Ser Leu Leu Val Ala Gly Ala Ala
117                 122                 127                 132

cag tat gat tgc ttt ttt caa cat tta cga ttg ttg gat gga gca ctt      607
Gln Tyr Asp Cys Phe Phe Gln His Leu Arg Leu Leu Asp Gly Ala Leu
133                 138                 143                 148

aaa ctt tca gct aag gat ctt aga tcc cag gtg gtt aga gaa gct tgt      655
Lys Leu Ser Ala Lys Asp Leu Arg Ser Gln Val Val Arg Glu Ala Cys
149                 154                 159                 164

att act gta gcc cac ctt tca aca gtt ttg gga aac aag ttt gat cat      703
Ile Thr Val Ala His Leu Ser Thr Val Leu Gly Asn Lys Phe Asp His
165                 170                 175                 180
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Gly Ala Glu Ala Ile Val Pro Thr Leu Phe Asn Leu Val Pro Asn Ser
181                 186                 191                 196

gca aaa gtc atg gca act tct gga tgt gca gca atc aga ttt atc att      799
Ala Lys Val Met Ala Thr Ser Gly Cys Ala Ala Ile Arg Phe Ile Ile
197                 202                 207                 212

cgg cat act cat gta ccc aga ctt ata cct tta ata aca agc aat tgc      847
Arg His Thr His Val Pro Arg Leu Ile Pro Leu Ile Thr Ser Asn Cys
213                 218                 223                 228

aca tca aaa tca gtt ccc gtg agg aga cgt tca ttt gaa ttt tta gat      895
Thr Ser Lys Ser Val Pro Val Arg Arg Arg Ser Phe Glu Phe Leu Asp
229                 234                 239                 244

tta ttg ttg caa gag tgg cag act cat tca ttg gaa aga cat gca gcc      943
Leu Leu Leu Gln Glu Trp Gln Thr His Ser Leu Glu Arg His Ala Ala
245                 250                 255                 260

gtc ttg gtt gaa act att aaa aag gga att cat gat gct gac gct gag      991
Val Leu Val Glu Thr Ile Lys Lys Gly Ile His Asp Ala Asp Ala Glu
261                 266                 271                 276

gcc aga gtg gag gca aga aag aca tac atg ggt ctt aga aac cac ttt     1039
Ala Arg Val Glu Ala Arg Lys Thr Tyr Met Gly Leu Arg Asn His Phe
277                 282                 287                 292

cct ggt gaa gct gaa aca tta tat aat tcc ctt gag cca tct tat cag     1087
Pro Gly Glu Ala Glu Thr Leu Tyr Asn Ser Leu Glu Pro Ser Tyr Gln
293                 298                 303                 308

aag agt ctt caa act tac tta aag agt tct ggc agt gta gca tct ctt     1135
Lys Ser Leu Gln Thr Tyr Leu Lys Ser Ser Gly Ser Val Ala Ser Leu
309                 314                 319                 324

cca caa tca gac agg tcc tca tcc agc tca cag gaa agt ctc aat cgc     1183
Pro Gln Ser Asp Arg Ser Ser Ser Ser Ser Gln Glu Ser Leu Asn Arg
325                 330                 335                 340

cct ttt tct tcc aaa tgg tct aca gca aat cca tca act gtg gct gga     1231
Pro Phe Ser Ser Lys Trp Ser Thr Ala Asn Pro Ser Thr Val Ala Gly
341                 346                 351                 356

aga gta tca gca ggc agc agc aaa gcc agt tcc ctt cca gga agc ctg     1279
Arg Val Ser Ala Gly Ser Ser Lys Ala Ser Ser Leu Pro Gly Ser Leu
357                 362                 367                 372

cag cgt tca cga agt gac att gat gtg aat gct gct gca ggt gcc aag     1327
Gln Arg Ser Arg Ser Asp Ile Asp Val Asn Ala Ala Ala Gly Ala Lys
373                 378                 383                 388

gca cat cat gct gct gga cag tct gtg cga agc ggg cgc tta ggt gca     1375
Ala His His Ala Ala Gly Gln Ser Val Arg Ser Gly Arg Leu Gly Ala
389                 394                 399                 404
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ggt gcc ctg aat gca ggt tcc tat gcg tca cta ggc cgg gtg aga gca      1423
Gly Ala Leu Asn Ala Gly Ser Tyr Ala Ser Leu Gly Arg Val Arg Ala
405                 410                 415                 420

aaa ctt tca gca cca ctt gct ggc atg gga aat gcc aag gca gat tct      1471
Lys Leu Ser Ala Pro Leu Ala Gly Met Gly Asn Ala Lys Ala Asp Ser
421                 426                 431                 436

aga gga aga agt cga aca aaa atg gtg tct caa tca cag cct ggt agc      1519
Arg Gly Arg Ser Arg Thr Lys Met Val Ser Gln Ser Gln Pro Gly Ser
437                 442                 447                 452

cgg tct ggg tct cca gga aga gtt ctg acc aca aca gcc ctg tcc act      1567
Arg Ser Gly Ser Pro Gly Arg Val Leu Thr Thr Thr Ala Leu Ser Thr
453                 458                 463                 468

gtg agc tct ggt gtt caa aga gtc ctg gtc aat tca gcc tca gca caa      1615
Val Ser Ser Gly Val Gln Arg Val Leu Val Asn Ser Ala Ser Ala Gln
469                 474                 479                 484

aaa aga agc aag ata cca cgg agc cag ggc tgt agc aga gag gct agt      1663
Lys Arg Ser Lys Ile Pro Arg Ser Gln Gly Cys Ser Arg Glu Ala Ser
485                 490                 495                 500

cca tct agg ctt tca gtg gcc cga agc agt cgt att cct cga cca agt      1711
Pro Ser Arg Leu Ser Val Ala Arg Ser Ser Arg Ile Pro Arg Pro Ser
501                 506                 511                 516

gtg agt caa gga tgc agc cgg gaa gct agt cgg gag agc agc aga gac      1759
Val Ser Gln Gly Cys Ser Arg Glu Ala Ser Arg Glu Ser Ser Arg Asp
517                 522                 527                 532

aca agt cct gtt cgc tct ttt cag ccc ctc gcc tcc aga cac cat tcc      1807
Thr Ser Pro Val Arg Ser Phe Gln Pro Leu Ala Ser Arg His His Ser
533                 538                 543                 548

aga tca act ggt gcc ctc tac gcc ccc gaa gtg tat ggg gcc tca ggt      1855
Arg Ser Thr Gly Ala Leu Tyr Ala Pro Glu Val Tyr Gly Ala Ser Gly
549                 554                 559                 564

cca ggt tat ggg atc agc caa tca agt cga ctg tcg tct tct gtt agt      1903
Pro Gly Tyr Gly Ile Ser Gln Ser Ser Arg Leu Ser Ser Ser Val Ser
565                 570                 575                 580

gcc atg cga gtc ctg aac aca ggt tct gat gtg gag gag gcg gtg gca      1951
Ala Met Arg Val Leu Asn Thr Gly Ser Asp Val Glu Glu Ala Val Ala
581                 586                 591                 596

gat gcc ttg ctc tta gga gac ata cgg act aag aaa aaa cca gct cga      1999
Asp Ala Leu Leu Leu Gly Asp Ile Arg Thr Lys Lys Lys Pro Ala Arg
597                 602                 607                 612

aga aga tat gaa tca tat gga atg cat tca gat gat gac gcc aac agc      2047
Arg Arg Tyr Glu Ser Tyr Gly Met His Ser Asp Asp Asp Ala Asn Ser
613                 618                 623                 628

gat gca tct agt gct tgt tca gaa cgc tcc tat agt tct cga aat ggt      2095
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Asp Ala Ser Ser Ala Cys Ser Glu Arg Ser Tyr Ser Ser Arg Asn Gly
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agt att cct aca tat atg agg cag acg gaa gat gtg gca gaa gtc ctc      2143
Ser Ile Pro Thr Tyr Met Arg Gln Thr Glu Asp Val Ala Glu Val Leu
645                 650                 655                 660

aat aga tgt gct agt tcc aat tgg tca gaa agg aaa gaa ggc ctc cta      2191
Asn Arg Cys Ala Ser Ser Asn Trp Ser Glu Arg Lys Glu Gly Leu Leu
661                 666                 671                 676

ggt ctg cag aac tta tta aaa aat cag aga aca cta agt cga gtt gaa      2239
Gly Leu Gln Asn Leu Leu Lys Asn Gln Arg Thr Leu Ser Arg Val Glu
677                 682                 687                 692

ctg aaa aga tta tgt gaa att ttc aca aga atg ttt gct gac cct cat      2287
Leu Lys Arg Leu Cys Glu Ile Phe Thr Arg Met Phe Ala Asp Pro His
693                 698                 703                 708

ggc aag aga gta ttc agc atg ttt ttg gag act cta gtg gat ttc ata      2335
Gly Lys Arg Val Phe Ser Met Phe Leu Glu Thr Leu Val Asp Phe Ile
709                 714                 719                 724

caa gtc cac aaa gat gat ctt caa gat tgg ttg ttt gta ctg ctg aca      2383
Gln Val His Lys Asp Asp Leu Gln Asp Trp Leu Phe Val Leu Leu Thr
725                 730                 735                 740

caa cta cta aaa aaa atg ggt gct gat ttg ctt gga tct gtt cag gca      2431
Gln Leu Leu Lys Lys Met Gly Ala Asp Leu Leu Gly Ser Val Gln Ala
741                 746                 751                 756

aaa gtt cag aaa gcc ctt gat gtt aca aga gag tct ttt cca aat gat      2479
Lys Val Gln Lys Ala Leu Asp Val Thr Arg Glu Ser Phe Pro Asn Asp
757                 762                 767                 772

ctt cag ttc aat att cta atg aga ttt aca gtt gat cag acc cag aca      2527
Leu Gln Phe Asn Ile Leu Met Arg Phe Thr Val Asp Gln Thr Gln Thr
773                 778                 783                 788

cca agc tta aag gtg aag gtt gct atc ctt aaa tac ata gaa act ctg      2575
Pro Ser Leu Lys Val Lys Val Ala Ile Leu Lys Tyr Ile Glu Thr Leu
789                 794                 799                 804

gcc aaa cag atg gat cca gga gat ttt ata aat tcc agt gaa act cgc      2623
Ala Lys Gln Met Asp Pro Gly Asp Phe Ile Asn Ser Ser Glu Thr Arg
805                 810                 815                 820

cta gca gtg tct cgg gtc atc act tgg aca aca gaa ccc aaa agt tct      2671
Leu Ala Val Ser Arg Val Ile Thr Trp Thr Thr Glu Pro Lys Ser Ser
821                 826                 831                 836

gat gtt cgg aag gca gca cag tca gtg ctg att tca tta ttt gaa ctc      2719
Asp Val Arg Lys Ala Ala Gln Ser Val Leu Ile Ser Leu Phe Glu Leu
837                 842                 847                 852

aat acc cca gag ttt aca atg tta tta gga gct tta cca aaa act ttt      2767
Asn Thr Pro Glu Phe Thr Met Leu Leu Gly Ala Leu Pro Lys Thr Phe
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853                 858                 863                 868

cag gat ggt gct acc aag ctt ctt cat aat cac ctt cga aac act ggc      2815
Gln Asp Gly Ala Thr Lys Leu Leu His Asn His Leu Arg Asn Thr Gly
869                 874                 879                 884

aat gga acc cag agt tcc atg ggg agt cct ttg aca aga cca aca cca      2863
Asn Gly Thr Gln Ser Ser Met Gly Ser Pro Leu Thr Arg Pro Thr Pro
885                 890                 895                 900

cga tca cca gct aac tgg tcc agt cct ctt act tct cct acc aat aca      2911
Arg Ser Pro Ala Asn Trp Ser Ser Pro Leu Thr Ser Pro Thr Asn Thr
901                 906                 911                 916

tca cag aat act tta tct cca agt gca ttt gat tat gac aca gaa aat      2959
Ser Gln Asn Thr Leu Ser Pro Ser Ala Phe Asp Tyr Asp Thr Glu Asn
917                 922                 927                 932

atg aac tct gaa gat att tat agc tct ctt aga ggt gtc act gaa gca      3007
Met Asn Ser Glu Asp Ile Tyr Ser Ser Leu Arg Gly Val Thr Glu Ala
933                 938                 943                 948

atc cag aat ttc agc ttc cgt agc caa gaa gat atg aat gag cca ttg      3055
Ile Gln Asn Phe Ser Phe Arg Ser Gln Glu Asp Met Asn Glu Pro Leu
949                 954                 959                 964

aaa agg gat tct aaa aaa gat gat ggc gat tca atg tgt ggt ggt cct      3103
Lys Arg Asp Ser Lys Lys Asp Asp Gly Asp Ser Met Cys Gly Gly Pro
965                 970                 975                 980

ggg atg tct gac cca aga gca gga ggt gat gct act gac tca agt caa      3151
Gly Met Ser Asp Pro Arg Ala Gly Gly Asp Ala Thr Asp Ser Ser Gln
981                 986                 991                 996

aca gct ctt gat aat aaa gct tca ttg ctc cat tca atg cct act cac      3199
Thr Ala Leu Asp Asn Lys Ala Ser Leu Leu His Ser Met Pro Thr His
997                1002                1007                1012

tcc tct cca cgc tct cga gac tat aat cca tat aac tat tca gat agc      3247
Ser Ser Pro Arg Ser Arg Asp Tyr Asn Pro Tyr Asn Tyr Ser Asp Ser
1013               1018                1023                1028

atc agt ccc ttc aac aag tct gcc ctc aag gaa gcc atg ttt gat gat      3295
Ile Ser Pro Phe Asn Lys Ser Ala Leu Lys Glu Ala Met Phe Asp Asp
1029               1034                1039                1044

gat gct gac cag ttt cct gac gat ctt tcc cta gat cat tct gac cta      3343
Asp Ala Asp Gln Phe Pro Asp Asp Leu Ser Leu Asp His Ser Asp Leu
1045               1050                1055                1060

gtt gca gag ttg ttg aag gag ctg tct aac cat aat gag cgt gta gaa      3391
Val Ala Glu Leu Leu Lys Glu Leu Ser Asn His Asn Glu Arg Val Glu
1061               1066                1071                1076

gaa aga aaa att gcc ctc tat gaa ctt atg aaa ctg aca cag gaa gaa      3439
Glu Arg Lys Ile Ala Leu Tyr Glu Leu Met Lys Leu Thr Gln Glu Glu
1077               1082                1087                1092
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tct ttt agt gtt tgg gat gaa cac ttc aaa aca ata ttg ctt tta ttg      3487
Ser Phe Ser Val Trp Asp Glu His Phe Lys Thr Ile Leu Leu Leu Leu
1093                1098                1103                1108

ctt gaa acg ctt gga gat aaa gag cct aca atc agg gct ttg gca tta      3535
Leu Glu Thr Leu Gly Asp Lys Glu Pro Thr Ile Arg Ala Leu Ala Leu
1109                1114                1119                1124

aag gtt tta aga gaa atc cta agg cat caa cca gca aga ttt aaa aac      3583
Lys Val Leu Arg Glu Ile Leu Arg His Gln Pro Ala Arg Phe Lys Asn
1125                1130                1135                1140

tat gca gaa ttg act gtc atg aaa aca ttg gaa gca cat aaa gat cct      3631
Tyr Ala Glu Leu Thr Val Met Lys Thr Leu Glu Ala His Lys Asp Pro
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cat aag gag gtg gtg aga tct gct gag gaa gcg gca tca gtg ttg gcc      3679
His Lys Glu Val Val Arg Ser Ala Glu Glu Ala Ala Ser Val Leu Ala
1157                1162                1167                1172

act tca att agt cca gag cag tgc atc aaa gtg ctt tgt cct atc att      3727
Thr Ser Ile Ser Pro Glu Gln Cys Ile Lys Val Leu Cys Pro Ile Ile
1173                1178                1183                1188

caa act gca gac tac cca att aat ctg gct gca atc aaa atg caa aca      3775
Gln Thr Ala Asp Tyr Pro Ile Asn Leu Ala Ala Ile Lys Met Gln Thr
1189                1194                1199                1204

aaa gtg ata gag aga gtg tcc aag gaa acc cta aac ctg ctt ttg cca      3823
Lys Val Ile Glu Arg Val Ser Lys Glu Thr Leu Asn Leu Leu Leu Pro
1205                1210                1215                1220

gag att atg cca ggt cta ata cag ggt tat gat aat tca gag agc agt      3871
Glu Ile Met Pro Gly Leu Ile Gln Gly Tyr Asp Asn Ser Glu Ser Ser
1221                1226                1231                1236

gtt cgg aaa gct tgt gtc ttc tgc ctg gtg gct gtt cat gcg gta att      3919
Val Arg Lys Ala Cys Val Phe Cys Leu Val Ala Val His Ala Val Ile
1237                1242                1247                1252

ggt gat gaa cta aaa cca cat ctc agt caa ctt act ggc agt aaa atg      3967
Gly Asp Glu Leu Lys Pro His Leu Ser Gln Leu Thr Gly Ser Lys Met
1253                1258                1263                1268

aag cta ctg aat ctt tac atc aaa cgt gca caa aca ggt tct gga gga      4015
Lys Leu Leu Asn Leu Tyr Ile Lys Arg Ala Gln Thr Gly Ser Gly Gly
1269                1274                1279                1284

gct gat ccc act act gat gtt tct gga caa agt tag tgaa gctcatcaca      4065
Ala Asp Pro Thr Thr Asp Val Ser Gly Gln Ser  *
1285                1290                1295

gcgaaccagg tctctcaaaa gaaaggacag atagaccacc ctcatcaatg aaaggaagtt    4125

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cgacctgcgg cggctccggg tgactcgggc cagtgtagag gtcctcaggc cgccggcagg     180

agcagctggg ccaattccct ggccgggagc ggaagggg atg gcg tcg ggc ctg         233
                                          Met Ala Ser Gly Leu
                                          1

ggc tcc ccg tcc ccc tgc tcg gcg ggc agt gag gag gag gat atg gat       281
Gly Ser Pro Ser Pro Cys Ser Ala Gly Ser Glu Glu Glu Asp Met Asp
6                   11                  16                  21

gca ctt ttg aac aac agc ctg ccc cca ccc cac cca gaa aat gaa gag       329
Ala Leu Leu Asn Asn Ser Leu Pro Pro Pro His Pro Glu Asn Glu Glu
22                  27                  32                  37

gac cca gaa gag gat ttg tca gaa aca gag act cca aag ctc aag aag       377
Asp Pro Glu Glu Asp Leu Ser Glu Thr Glu Thr Pro Lys Leu Lys Lys
38                  43                  48                  53

aag aaa aag cct aag aaa cct cgg gac cct aaa atc cct aag agc aag       425
Lys Lys Lys Pro Lys Lys Pro Arg Asp Pro Lys Ile Pro Lys Ser Lys
54                  59                  64                  69
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cgc caa aaa aag gag cgt atg ctc tta tgc cgg cag ctg ggg gac agc
Arg Gln Lys Lys Glu Arg Met Leu Leu Cys Arg Gln Leu Gly Asp Ser      473
 70                 75                  80                  85

tct ggg gag ggg cca gag ttt gtg gag gag gag gaa gag gtg gct ctg
Ser Gly Glu Gly Pro Glu Phe Val Glu Glu Glu Glu Glu Val Ala Leu      521
 86                 91                  96                 101

cgc tca gac agt gag ggc agc gac tat act cct ggc aag aag aag aag
Arg Ser Asp Ser Glu Gly Ser Asp Tyr Thr Pro Gly Lys Lys Lys Lys      569
102                107                 112                 117

aag aag ctt gga cct aag aaa gag aag aag agc aaa tcc aag cgg aag
Lys Lys Leu Gly Pro Lys Lys Glu Lys Lys Ser Lys Ser Lys Arg Lys      617
118                123                 128                 133

gag gag gag gag gag gat gat gat gat gat gat tca aag gag cct aaa
Glu Glu Glu Glu Glu Asp Asp Asp Asp Asp Asp Ser Lys Glu Pro Lys      665
134                139                 144                 149

tca tct gct cag ctc ctg gaa gac tgg ggc atg gaa gac att gac cac
Ser Ser Ala Gln Leu Leu Glu Asp Trp Gly Met Glu Asp Ile Asp His      713
150                155                 160                 165

gtg ttc tca gag gag gat tat cga acc ctc acc aac tac aag gcc ttc
Val Phe Ser Glu Glu Asp Tyr Arg Thr Leu Thr Asn Tyr Lys Ala Phe      761
166                171                 176                 181

agc cag ttt gtc aga ccc ctc att gct gcc aaa aat ccc aag att gct
Ser Gln Phe Val Arg Pro Leu Ile Ala Ala Lys Asn Pro Lys Ile Ala      809
182                187                 192                 197

gtc tcc aag atg atg atg gtt ttg ggt gca aaa tgg cgg gag ttc agt
Val Ser Lys Met Met Met Val Leu Gly Ala Lys Trp Arg Glu Phe Ser      857
198                203                 208                 213

acc aat aac ccc ttc aaa ggc agt tct ggg gca tca gtg gca gct gcg
Thr Asn Asn Pro Phe Lys Gly Ser Ser Gly Ala Ser Val Ala Ala Ala      905
214                219                 224                 229

gca gca gca gcg gta gct gtg gtg gag agc atg gtg aca gcc act gag
Ala Ala Ala Ala Val Ala Val Val Glu Ser Met Val Thr Ala Thr Glu      953
230                235                 240                 245

gtt gca cca cca cct ccc cct gtg gag gtg cct atc cgc aag gcc aag
Val Ala Pro Pro Pro Pro Pro Val Glu Val Pro Ile Arg Lys Ala Lys     1001
246                251                 256                 261

acc aag gag ggc aaa ggt ccc aat gct cgg agg aag ccc aag ggc agc
Thr Lys Glu Gly Lys Gly Pro Asn Ala Arg Arg Lys Pro Lys Gly Ser     1049
262                267                 272                 277

cct cgt gta cct gat gcc aag aag cct aaa ccc aag aaa gta gct ccc
Pro Arg Val Pro Asp Ala Lys Lys Pro Lys Pro Lys Lys Val Ala Pro     1097
278                283                 288                 293
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ctg aaa atc aag ctg gga ggt ttt ggt tcc aag cgt aag aga tcc tcg      1145
Leu Lys Ile Lys Leu Gly Gly Phe Gly Ser Lys Arg Lys Arg Ser Ser
294                 299                 304                 309

agt gag gat gat gac tta gat gtg gaa tct gac ttc gat gat gcc agt      1193
Ser Glu Asp Asp Asp Leu Asp Val Glu Ser Asp Phe Asp Asp Ala Ser
310                 315                 320                 325

atc aat agc tat tct gtt tct gat ggt tcc acc agc cgt agt agc cgc      1241
Ile Asn Ser Tyr Ser Val Ser Asp Gly Ser Thr Ser Arg Ser Ser Arg
326                 331                 336                 341

agc cgc aag aaa ctc cga acc act aaa aag aaa aaa aaa ggc gag gag      1289
Ser Arg Lys Lys Leu Arg Thr Thr Lys Lys Lys Lys Lys Gly Glu Glu
342                 347                 352                 357

gag gtg act gct gtg gat ggt tat gag aca gac cac cag gac tat tgc      1337
Glu Val Thr Ala Val Asp Gly Tyr Glu Thr Asp His Gln Asp Tyr Cys
358                 363                 368                 373

gag gtg tgc cag caa ggc ggt gag atc atc ctg tgt gat acc tgt ccc      1385
Glu Val Cys Gln Gln Gly Gly Glu Ile Ile Leu Cys Asp Thr Cys Pro
374                 379                 384                 389

cgt gct tac cac atg gtc tgc ctg gat ccc gac atg gag aag gct ccc      1433
Arg Ala Tyr His Met Val Cys Leu Asp Pro Asp Met Glu Lys Ala Pro
390                 395                 400                 405

gag ggc aag tgg agc tgc cca cac tgc gag aag gaa ggc atc cag tgg      1481
Glu Gly Lys Trp Ser Cys Pro His Cys Glu Lys Glu Gly Ile Gln Trp
406                 411                 416                 421

gaa gct aaa gag gac aat tcg gag ggt gag gag atc ctg gaa gag gtt      1529
Glu Ala Lys Glu Asp Asn Ser Glu Gly Glu Glu Ile Leu Glu Glu Val
422                 427                 432                 437

ggg gga gac ctc gaa gag gag gat gac cac cat atg gaa ttc tgt cgg      1577
Gly Gly Asp Leu Glu Glu Glu Asp Asp His His Met Glu Phe Cys Arg
438                 443                 448                 453

gtc tgc aag gat ggt ggg gaa ctg ctc tgc tgt gat acc tgt cct tct      1625
Val Cys Lys Asp Gly Gly Glu Leu Leu Cys Cys Asp Thr Cys Pro Ser
454                 459                 464                 469

tcc tac cac atc cac tgc ctg aat ccc cca ctt cca gag atc ccc aac      1673
Ser Tyr His Ile His Cys Leu Asn Pro Pro Leu Pro Glu Ile Pro Asn
470                 475                 480                 485

ggt gaa tgg ctc tgt ccc cgt tgt acg tgt cca gct ctg aag ggc aaa      1721
Gly Glu Trp Leu Cys Pro Arg Cys Thr Cys Pro Ala Leu Lys Gly Lys
486                 491                 496                 501

gtg cag aag atc cta atc tgg aag tgg ggt cag cca cca tct ccc aca      1769
Val Gln Lys Ile Leu Ile Trp Lys Trp Gly Gln Pro Pro Ser Pro Thr
502                 507                 512                 517

cca gtg cct cgg cct cca gat gct gat ccc aac acg ccc tcc cca aag      1817
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Pro Val Pro Arg Pro Pro Asp Ala Asp Pro Asn Thr Pro Ser Pro Lys
518                 523                 528                 533

ccc ttg gag ggg cgg cca gag cgg cag ttc ttt gtg aaa tgg caa ggc      1865
Pro Leu Glu Gly Arg Pro Glu Arg Gln Phe Phe Val Lys Trp Gln Gly
534                 539                 544                 549

atg tct tac tgg cac tgc tcc tgg gtt tct gaa ctg cag ctg gag ctg      1913
Met Ser Tyr Trp His Cys Ser Trp Val Ser Glu Leu Gln Leu Glu Leu
550                 555                 560                 565

cac tgt cag gtg atg ttc cga aac tat cag cgg aag aat gat atg gat      1961
His Cys Gln Val Met Phe Arg Asn Tyr Gln Arg Lys Asn Asp Met Asp
566                 571                 576                 581

gag cca cct tct ggg gac ttt ggt ggt gat gaa gag aaa agc cga aag      2009
Glu Pro Pro Ser Gly Asp Phe Gly Gly Asp Glu Glu Lys Ser Arg Lys
582                 587                 592                 597

cga aag aac aag gac cct aaa ttt gca gag atg gag gaa cgc ttc tat      2057
Arg Lys Asn Lys Asp Pro Lys Phe Ala Glu Met Glu Glu Arg Phe Tyr
598                 603                 608                 613

cgc tat ggg ata aaa ccc gag tgg atg atg atc cac cga atc ctc aac      2105
Arg Tyr Gly Ile Lys Pro Glu Trp Met Met Ile His Arg Ile Leu Asn
614                 619                 624                 629

cac agt gtg gac aag aag ggc cac gtc cac tac ttg atc aag tgg cgg      2153
His Ser Val Asp Lys Lys Gly His Val His Tyr Leu Ile Lys Trp Arg
630                 635                 640                 645

gac tta cct tac gat cag gct tct tgg gag agt gag gat gtg gag atc      2201
Asp Leu Pro Tyr Asp Gln Ala Ser Trp Glu Ser Glu Asp Val Glu Ile
646                 651                 656                 661

cag gat tac gac ctg ttc aag cag agc tat tgg aat cac agg gag tta      2249
Gln Asp Tyr Asp Leu Phe Lys Gln Ser Tyr Trp Asn His Arg Glu Leu
662                 667                 672                 677

atg agg ggt gag gaa ggc cga cca ggc aag aag ctc aag aag gtg aag      2297
Met Arg Gly Glu Glu Gly Arg Pro Gly Lys Lys Leu Lys Lys Val Lys
678                 683                 688                 693

ctt cgg aag ttg gag agg cct cca gaa acg cca aca gtt gat cca aca      2345
Leu Arg Lys Leu Glu Arg Pro Pro Glu Thr Pro Thr Val Asp Pro Thr
694                 699                 704                 709

gtg aag tat gag cga cac gca gag tac ctg gat gct aca ggt gga acc      2393
Val Lys Tyr Glu Arg His Ala Glu Tyr Leu Asp Ala Thr Gly Gly Thr
710                 715                 720                 725

ctg cac ccc tat caa atg gag ggc ctg aat tgg ttg cgc ttc tcc tgg      2441
Leu His Pro Tyr Gln Met Glu Gly Leu Asn Trp Leu Arg Phe Ser Trp
726                 731                 736                 741

gct cag ggc act gac acc atc ttg gct gat gag atg ggc ctt ggg aaa      2489
Ala Gln Gly Thr Asp Thr Ile Leu Ala Asp Glu Met Gly Leu Gly Lys
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742                 747                 752                 757

act gta cag aca gca gtc ttc ctg tat tcc ctt tac aag gag ggt cat      2537
Thr Val Gln Thr Ala Val Phe Leu Tyr Ser Leu Tyr Lys Glu Gly His
758                 763                 768                 773

tcc aaa ggc ccc ttc cta gtg agc gcc cct ctt tct acc atc atc aac      2585
Ser Lys Gly Pro Phe Leu Val Ser Ala Pro Leu Ser Thr Ile Ile Asn
774                 779                 784                 789

tgg gag cgg gag ttt gaa atg tgg gct cca gac atg tat gtc gta acc      2633
Trp Glu Arg Glu Phe Glu Met Trp Ala Pro Asp Met Tyr Val Val Thr
790                 795                 800                 805

tat gtg ggt gac aag gac agc cgt gcc atc atc cga gag aat gag ttc      2681
Tyr Val Gly Asp Lys Asp Ser Arg Ala Ile Ile Arg Glu Asn Glu Phe
806                 811                 816                 821

tcc ttt gaa gac aat gcc att cgt ggt ggc aag aag gcc tcc cgc atg      2729
Ser Phe Glu Asp Asn Ala Ile Arg Gly Gly Lys Lys Ala Ser Arg Met
822                 827                 832                 837

aag aaa gag gca tct gtg aaa ttc cat gtg ctg ctg aca tcc tat gaa      2777
Lys Lys Glu Ala Ser Val Lys Phe His Val Leu Leu Thr Ser Tyr Glu
838                 843                 848                 853

ttg atc acc att gac atg gct att ttg ggc tct att gat tgg gcc tgc      2825
Leu Ile Thr Ile Asp Met Ala Ile Leu Gly Ser Ile Asp Trp Ala Cys
854                 859                 864                 869

ctc atc gtg gat gaa gcc cat cgg ctg aag aac aat cag tct aag ttc      2873
Leu Ile Val Asp Glu Ala His Arg Leu Lys Asn Asn Gln Ser Lys Phe
870                 875                 880                 885

ttc cgg gta ttg aat ggt tac tca ctc cag cac aag ctg ttg ctg act      2921
Phe Arg Val Leu Asn Gly Tyr Ser Leu Gln His Lys Leu Leu Leu Thr
886                 891                 896                 901

ggg aca cca tta caa aac aat ctg gaa gag ttg ttt cat ctg ctc aac      2969
Gly Thr Pro Leu Gln Asn Asn Leu Glu Glu Leu Phe His Leu Leu Asn
902                 907                 912                 917

ttt ctc acc ccc gag agg ttc cac aat ttg gaa ggt ttt ttg gag gag      3017
Phe Leu Thr Pro Glu Arg Phe His Asn Leu Glu Gly Phe Leu Glu Glu
918                 923                 928                 933

ttt gct gac att gcc aag gag gac cag ata aaa aaa ctg cat gac atg      3065
Phe Ala Asp Ile Ala Lys Glu Asp Gln Ile Lys Lys Leu His Asp Met
934                 939                 944                 949

ctg ggg ccg cac atg ttg cgg cgg ctc aaa gcc gat gtg ttc aag aac      3113
Leu Gly Pro His Met Leu Arg Arg Leu Lys Ala Asp Val Phe Lys Asn
950                 955                 960                 965

atg ccc tcc aag aca gaa cta att gtg cgt gtg gag ctg agc cct atg      3161
Met Pro Ser Lys Thr Glu Leu Ile Val Arg Val Glu Leu Ser Pro Met
966                 971                 976                 981
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cag aag aaa tac tac aag tac atc ctc act cga aat ttt gaa gca ctc      3209
Gln Lys Lys Tyr Tyr Lys Tyr Ile Leu Thr Arg Asn Phe Glu Ala Leu
982                 987                 992                 997

aat gcc cga ggt ggt ggc aac cag gtg tct ctg ctg aat gtg gtg atg      3257
Asn Ala Arg Gly Gly Gly Asn Gln Val Ser Leu Leu Asn Val Val Met
998                1003                1008                1013

gat ctt aag aag tgc tgc aac cat cca tac ctc ttc cct gtg gct gca      3305
Asp Leu Lys Lys Cys Cys Asn His Pro Tyr Leu Phe Pro Val Ala Ala
1014               1019                1024                1029

atg gaa gct cct aag atg cct aat ggc atg tat gat ggc agt gcc cta      3353
Met Glu Ala Pro Lys Met Pro Asn Gly Met Tyr Asp Gly Ser Ala Leu
1030               1035                1040                1045

atc aga gca tct ggg aaa tta ttg ctg ctg cag aaa atg ctc aag aac      3401
Ile Arg Ala Ser Gly Lys Leu Leu Leu Leu Gln Lys Met Leu Lys Asn
1046               1051                1056                1061

ctt aag gag ggt ggg cat cgt gta ctc atc ttt tcc cag atg acc aag      3449
Leu Lys Glu Gly Gly His Arg Val Leu Ile Phe Ser Gln Met Thr Lys
1062               1067                1072                1077

atg cta gac ctg cta gag gat ttc ttg gaa cat gaa ggt tat aaa tac      3497
Met Leu Asp Leu Leu Glu Asp Phe Leu Glu His Glu Gly Tyr Lys Tyr
1078               1083                1088                1093

gaa cgc atc gat ggt gga atc act ggg aac atg cgg caa gag gcc att      3545
Glu Arg Ile Asp Gly Gly Ile Thr Gly Asn Met Arg Gln Glu Ala Ile
1094               1099                1104                1109

gac cgc ttc aat gca ccg ggt gct cag cag ttc tgc ttc ttg ctt tcc      3593
Asp Arg Phe Asn Ala Pro Gly Ala Gln Gln Phe Cys Phe Leu Leu Ser
1110               1115                1120                1125

act cga gct ggg ggc ctt gga atc aat ctg gcc act gct gac aca gtt      3641
Thr Arg Ala Gly Gly Leu Gly Ile Asn Leu Ala Thr Ala Asp Thr Val
1126               1131                1136                1141

att atc tat gac tct gac tgg aac ccc cat aat gac att cag gcc ttt      3689
Ile Ile Tyr Asp Ser Asp Trp Asn Pro His Asn Asp Ile Gln Ala Phe
1142               1147                1152                1157

agc aga gct cac cgg att ggg caa aat aaa aag gta atg atc tac cgg      3737
Ser Arg Ala His Arg Ile Gly Gln Asn Lys Lys Val Met Ile Tyr Arg
1158               1163                1168                1173

ttt gtg acc cgt gcg tca gtg gag gag cgc atc acg cag gtg gca aag      3785
Phe Val Thr Arg Ala Ser Val Glu Glu Arg Ile Thr Gln Val Ala Lys
1174               1179                1184                1189

aag aaa atg atg ctg acg cat cta gtg gtg cgg cct ggg ctg ggc tcc      3833
Lys Lys Met Met Leu Thr His Leu Val Val Arg Pro Gly Leu Gly Ser
1190               1195                1200                1205
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aag act gga tct atg tcc aaa cag gag ctt gat gat atc ctc aaa ttt      3881
Lys Thr Gly Ser Met Ser Lys Gln Glu Leu Asp Asp Ile Leu Lys Phe
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ggc act gag gaa cta ttc aag gat gaa gcc act gat gga gga gga gac      3929
Gly Thr Glu Glu Leu Phe Lys Asp Glu Ala Thr Asp Gly Gly Gly Asp
1222                1227                1232                1237

aac aaa gag gga gaa gat agc agt gtt atc cac tac gat gat aag gcc      3977
Asn Lys Glu Gly Glu Asp Ser Ser Val Ile His Tyr Asp Asp Lys Ala
1238                1243                1248                1253

att gaa cgg ctg cta gac cgt aac cag gat gag act gaa gac aca gaa      4025
Ile Glu Arg Leu Leu Asp Arg Asn Gln Asp Glu Thr Glu Asp Thr Glu
1254                1259                1264                1269

ttg cag ggc atg aat gaa tat ttg agc tca ttc aaa gtg gcc cag tat      4073
Leu Gln Gly Met Asn Glu Tyr Leu Ser Ser Phe Lys Val Ala Gln Tyr
1270                1275                1280                1285

gtg gta cgg gaa gaa gaa atg ggg gag gaa gag gag gta gaa cgg gaa      4121
Val Val Arg Glu Glu Glu Met Gly Glu Glu Glu Glu Val Glu Arg Glu
1286                1291                1296                1301

atc att aaa cag gaa gaa agt gtg gat cct gac tac tgg gag aaa ttg      4169
Ile Ile Lys Gln Glu Glu Ser Val Asp Pro Asp Tyr Trp Glu Lys Leu
1302                1307                1312                1317

ctg cgg cac cat tat gag cag cag caa gaa gat cta gcc cga aat ctg      4217
Leu Arg His His Tyr Glu Gln Gln Gln Glu Asp Leu Ala Arg Asn Leu
1318                1323                1328                1333

ggc aaa gga aaa aga atc cgt aaa cag gtc aac tac aat gat ggc tcc      4265
Gly Lys Gly Lys Arg Ile Arg Lys Gln Val Asn Tyr Asn Asp Gly Ser
1334                1339                1344                1349

cag gag gac cga gat tgg cag gac gac cag tcc gac aac cag tcc gat      4313
Gln Glu Asp Arg Asp Trp Gln Asp Asp Gln Ser Asp Asn Gln Ser Asp
1350                1355                1360                1365

tac tca gtg gct tca gag gaa ggt gat gaa gac ttt gat gaa cgt tca      4361
Tyr Ser Val Ala Ser Glu Glu Gly Asp Glu Asp Phe Asp Glu Arg Ser
1366                1371                1376                1381

gaa gct ccc cgt agg ccc agt cgt aag ggc ctg cgg aat gat aaa gat      4409
Glu Ala Pro Arg Arg Pro Ser Arg Lys Gly Leu Arg Asn Asp Lys Asp
1382                1387                1392                1397

aag cca ttg cct cct ctg ttg gcc cgt gtt ggt ggg aat att gaa gta      4457
Lys Pro Leu Pro Pro Leu Leu Ala Arg Val Gly Gly Asn Ile Glu Val
1398                1403                1408                1413

ctt ggt ttt aat gct cgt cag cga aaa gcc ttt ctt aat gca att atg      4505
Leu Gly Phe Asn Ala Arg Gln Arg Lys Ala Phe Leu Asn Ala Ile Met
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cga tat ggt atg cca cct cag gat gct ttt act acc cag tgg ctt gta      4553
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Arg Tyr Gly Met Pro Pro Gln Asp Ala Phe Thr Thr Gln Trp Leu Val
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aga gac ctg cga ggc aaa tca gag aaa gag ttc aag gca tat gtc tct       4601
Arg Asp Leu Arg Gly Lys Ser Glu Lys Glu Phe Lys Ala Tyr Val Ser
1446                1451                1456                1461

ctt ttc atg cgg cat tta tgt gag ccg ggg gca gat ggg gct gag acc       4649
Leu Phe Met Arg His Leu Cys Glu Pro Gly Ala Asp Gly Ala Glu Thr
1462                1467                1472                1477

ttt gct gat ggt gtc ccc cga gaa ggc ctg tct cgc cag cat gtc ctt       4697
Phe Ala Asp Gly Val Pro Arg Glu Gly Leu Ser Arg Gln His Val Leu
1478                1483                1488                1493

act aga att ggt gtt atg tct ttg att cgc aag aag gtt cag gag ttt       4745
Thr Arg Ile Gly Val Met Ser Leu Ile Arg Lys Lys Val Gln Glu Phe
1494                1499                1504                1509

gaa cat gtt aat ggg cgc tgg agc atg cct gaa ctg gct gag gtg gag       4793
Glu His Val Asn Gly Arg Trp Ser Met Pro Glu Leu Ala Glu Val Glu
1510                1515                1520                1525

gaa aac aag aag atg tcc cag cca ggg tca ccc tcc cca aaa act cct       4841
Glu Asn Lys Lys Met Ser Gln Pro Gly Ser Pro Ser Pro Lys Thr Pro
1526                1531                1536                1541

aca ccc tcc act cca ggg gac acg cag ccc aac act cct gca cct gtc       4889
Thr Pro Ser Thr Pro Gly Asp Thr Gln Pro Asn Thr Pro Ala Pro Val
1542                1547                1552                1557

cca cct gct gaa gat ggg ata aaa ata gag gaa aat agc ctc aaa gaa       4937
Pro Pro Ala Glu Asp Gly Ile Lys Ile Glu Glu Asn Ser Leu Lys Glu
1558                1563                1568                1573

gaa gag agc ata gaa gga gaa aag gag gtt aaa tct aca gcc cct gag       4985
Glu Glu Ser Ile Glu Gly Glu Lys Glu Val Lys Ser Thr Ala Pro Glu
1574                1579                1584                1589

act gcc att gag tgt aca cag gcc cct gcc cct gcc tca gag gat gaa       5033
Thr Ala Ile Glu Cys Thr Gln Ala Pro Ala Pro Ala Ser Glu Asp Glu
1590                1595                1600                1605

aag gtc gtt gtt gaa ccc cct gag gga gag gag aaa gtg gaa aag gca       5081
Lys Val Val Val Glu Pro Pro Glu Gly Glu Glu Lys Val Glu Lys Ala
1606                1611                1616                1621

gag gtg aag gag aga aca gag gaa cct atg gag aca gag ccc aaa ggt       5129
Glu Val Lys Glu Arg Thr Glu Glu Pro Met Glu Thr Glu Pro Lys Gly
1622                1627                1632                1637

gct gct gat gta gag aag gtg gag gaa aag tca gca ata gat ctg acc       5177
Ala Ala Asp Val Glu Lys Val Glu Glu Lys Ser Ala Ile Asp Leu Thr
1638                1643                1648                1653

cct att gtg gta gaa gac aaa gaa gag aag aaa gaa gaa gaa gag aaa       5225
Pro Ile Val Val Glu Asp Lys Glu Glu Lys Lys Glu Glu Glu Glu Lys
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aaa gag gtg atg ctt cag aat gga gag acc ccc aag gac ctg aat gat      5273
Lys Glu Val Met Leu Gln Asn Gly Glu Thr Pro Lys Asp Leu Asn Asp
1670                1675                1680                1685

gag aaa cag aag aaa aat att aaa caa cgt ttc atg ttt aac att gca      5321
Glu Lys Gln Lys Lys Asn Ile Lys Gln Arg Phe Met Phe Asn Ile Ala
1686                1691                1696                1701

gat ggt ggt ttt act gag ttg cac tcc ctt tgg cag aat gaa gag cgg      5369
Asp Gly Gly Phe Thr Glu Leu His Ser Leu Trp Gln Asn Glu Glu Arg
1702                1707                1712                1717

gca gcc aca gtt acc aag aag act tat gag atc tgg cat cga cgg cat      5417
Ala Ala Thr Val Thr Lys Lys Thr Tyr Glu Ile Trp His Arg Arg His
1718                1723                1728                1733

gac tac tgg ctg cta gcc ggc att ata aac cat ggc tat gcc cgg tgg      5465
Asp Tyr Trp Leu Leu Ala Gly Ile Ile Asn His Gly Tyr Ala Arg Trp
1734                1739                1744                1749

caa gac atc cag aat gac cca cgc tat gcc atc ctc aat gag cct ttc      5513
Gln Asp Ile Gln Asn Asp Pro Arg Tyr Ala Ile Leu Asn Glu Pro Phe
1750                1755                1760                1765

aag ggt gaa atg aac cgt ggc aat ttc tta gag atc aag aat aaa ttt      5561
Lys Gly Glu Met Asn Arg Gly Asn Phe Leu Glu Ile Lys Asn Lys Phe
1766                1771                1776                1781

cta gct cga agg ttt aag ctc tta gaa caa gct ctg gtg att gag gaa      5609
Leu Ala Arg Arg Phe Lys Leu Leu Glu Gln Ala Leu Val Ile Glu Glu
1782                1787                1792                1797

cag ctg cgc cgg gct gct tac ttg aac atg tca gaa gac cct tct cac      5657
Gln Leu Arg Arg Ala Ala Tyr Leu Asn Met Ser Glu Asp Pro Ser His
1798                1803                1808                1813

cct tcc atg gcc ctc aac acc cgc ttt gct gag gtg gag tgt ttg gcg      5705
Pro Ser Met Ala Leu Asn Thr Arg Phe Ala Glu Val Glu Cys Leu Ala
1814                1819                1824                1829

gaa agt cat cag cac ctg tcc aag gag tca atg gca gga aac aag cca      5753
Glu Ser His Gln His Leu Ser Lys Glu Ser Met Ala Gly Asn Lys Pro
1830                1835                1840                1845

gcc aat gca gtc ctg cac aaa gtt ctg aaa cag ctg gaa gaa ctg ctg      5801
Ala Asn Ala Val Leu His Lys Val Leu Lys Gln Leu Glu Glu Leu Leu
1846                1851                1856                1861

agt gac atg aaa gct gat gtg act cga ctc cca gct acc att gcc cga      5849
Ser Asp Met Lys Ala Asp Val Thr Arg Leu Pro Ala Thr Ile Ala Arg
1862                1867                1872                1877

att ccc cca gtt gct gtg agg tta cag atg tca gag cgt aac att ctc      5897
Ile Pro Pro Val Ala Val Arg Leu Gln Met Ser Glu Arg Asn Ile Leu
1878                1883                1888                1893
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10034240.010402

agc cgc ctg gca aac cgg gca ccc gaa cct acc cca cag cag gta gcc 5945
Ser Arg Leu Ala Asn Arg Ala Pro Glu Pro Thr Pro Gln Gln Val Ala
1894 1899 1904 1909

cag cag cag tga aga tgcagactga taccacctcc accgctgagc agtgaccttc 6000
Gln Gln Gln *
1910

ctcactttct cttgtcccag cttctcccct gggggcctga gagaccctca ccttccttct 6060

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1 5

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Gly Thr Glu Gly Gly Leu Arg Ala Ser His Gln Gln Asn Gly Asp Ala
10 15 20 25

ggt ggc gac gcg aag gtt gag ctg tcc ccc ggg ccc ccg aag ccg gct 207
Gly Gly Asp Ala Lys Val Glu Leu Ser Pro Gly Pro Pro Lys Pro Ala
26 31 36 41

ggc cgg gaa gtg gag ccg gcc cca gta ggc ggg gag cat ccc tcg gct 255
Gly Arg Glu Val Glu Pro Ala Pro Val Gly Gly Glu His Pro Ser Ala
42 47 52 57

gca gcc cca ggc ccg ggc aag cat aag aag cgg cgg ggc gca acc agg 303

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Ala Ala Pro Gly Pro Gly Lys His Lys Lys Arg Arg Gly Ala Thr Arg
 58                 63                  68                  73

gag cgt gtc gtg ccg ccc ccg aag aag cgg cgg acc ggg gtg agc ttc       351
Glu Arg Val Val Pro Pro Pro Lys Lys Arg Arg Thr Gly Val Ser Phe
 74                 79                  84                  89

gga gat gag cac ttt gca gaa acc agt tat tac ttc gag ggc ggc ctg       399
Gly Asp Glu His Phe Ala Glu Thr Ser Tyr Tyr Phe Glu Gly Gly Leu
 90                 95                 100                 105

cgt aag gtg cgg ccc tat tac ttt gac ttc cgg acc tac tgc aaa ggt       447
Arg Lys Val Arg Pro Tyr Tyr Phe Asp Phe Arg Thr Tyr Cys Lys Gly
106                111                 116                 121

cgc tgg gtg ggc cac agc ttg ctg cac gtc ttc agt acc gag ttc cga       495
Arg Trp Val Gly His Ser Leu Leu His Val Phe Ser Thr Glu Phe Arg
122                127                 132                 137

gct cag ccc ctg gct tac tat gag gcc gcg gtc cgg gcg ggc cgc ctg       543
Ala Gln Pro Leu Ala Tyr Tyr Glu Ala Ala Val Arg Ala Gly Arg Leu
138                143                 148                 153

caa ctc aac gag aag ccg gtg cag gac ctc aac atc gtg ctc aag gac       591
Gln Leu Asn Glu Lys Pro Val Gln Asp Leu Asn Ile Val Leu Lys Asp
154                159                 164                 169

aat gat ttc ttg cgg aac aca gtg cac agg cat gag cca cca gtc aca       639
Asn Asp Phe Leu Arg Asn Thr Val His Arg His Glu Pro Pro Val Thr
170                175                 180                 185

gca gag ccc att cgc ctg cta gct gag aac gaa gat gtg gtg gtt gta       687
Ala Glu Pro Ile Arg Leu Leu Ala Glu Asn Glu Asp Val Val Val Val
186                191                 196                 201

gac aag cct tcc tcc att ccc gtt cac ccc tgt ggc cgc ttc cga cac       735
Asp Lys Pro Ser Ser Ile Pro Val His Pro Cys Gly Arg Phe Arg His
202                207                 212                 217

aac aca gtt atc ttc atc cta ggc aag gag cac caa ctc aag gag cta       783
Asn Thr Val Ile Phe Ile Leu Gly Lys Glu His Gln Leu Lys Glu Leu
218                223                 228                 233

cac ccc ttg cat cgg ctt gac cgc ctt acc tca ggg gtg ctt atg ttt       831
His Pro Leu His Arg Leu Asp Arg Leu Thr Ser Gly Val Leu Met Phe
234                239                 244                 249

gcc aag aca gct gca gtc tct gag aga att cac gag cag gtt cgg gac       879
Ala Lys Thr Ala Ala Val Ser Glu Arg Ile His Glu Gln Val Arg Asp
250                255                 260                 265

cgg cag ctg gag aag gag tac gtg tgc cgg gtg gaa ggg gag ttc ccc       927
Arg Gln Leu Glu Lys Glu Tyr Val Cys Arg Val Glu Gly Glu Phe Pro
266                271                 276                 281

act gag gaa gtg acc tgt aaa gaa ccc atc tta gtg gtg tct tac aaa       975
Thr Glu Glu Val Thr Cys Lys Glu Pro Ile Leu Val Val Ser Tyr Lys
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282                 287                 292                 297

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Val Gly Val Cys Arg Val Asp Pro Arg Gly Lys Pro Cys Glu Thr Val
298                 303                 308                 313

ttc cag agg cta agc tac aat ggc cag tcc agt gtg gta cgg tgc cgg      1071
Phe Gln Arg Leu Ser Tyr Asn Gly Gln Ser Ser Val Val Arg Cys Arg
314                 319                 324                 329

cca ctc aca ggc cgc aca cac cag att cga gtc cac ctt cag ttc ttg      1119
Pro Leu Thr Gly Arg Thr His Gln Ile Arg Val His Leu Gln Phe Leu
330                 335                 340                 345

ggc cat ccc att ctc aac gac ccc atc tac aac tca gtt gcc tgg ggt      1167
Gly His Pro Ile Leu Asn Asp Pro Ile Tyr Asn Ser Val Ala Trp Gly
346                 351                 356                 361

cct tct cga ggc cgg ggc ggc tac att ccc aag aca aac gag gag ttg      1215
Pro Ser Arg Gly Arg Gly Gly Tyr Ile Pro Lys Thr Asn Glu Glu Leu
362                 367                 372                 377

cta cgg gac ctg gta gca gag cac cag gcc aaa cag agc ctg gat gtg      1263
Leu Arg Asp Leu Val Ala Glu His Gln Ala Lys Gln Ser Leu Asp Val
378                 383                 388                 393

cta gat ctc tgt gag ggt gac ctg tcc cca gga ctc aca gac tct acg      1311
Leu Asp Leu Cys Glu Gly Asp Leu Ser Pro Gly Leu Thr Asp Ser Thr
394                 399                 404                 409

gcc ccc tcc tca gag ttg ggc aag gac gac ctg gaa gag ttg gct gca      1359
Ala Pro Ser Ser Glu Leu Gly Lys Asp Asp Leu Glu Glu Leu Ala Ala
410                 415                 420                 425

gct gcc cag aag atg gag gaa gta gct gag gca gcc cct cag gag ttg      1407
Ala Ala Gln Lys Met Glu Glu Val Ala Glu Ala Ala Pro Gln Glu Leu
426                 431                 436                 441

gac aca ata gcc ttg gca tca gag aag gca gtt gaa aca gat gtc atg      1455
Asp Thr Ile Ala Leu Ala Ser Glu Lys Ala Val Glu Thr Asp Val Met
442                 447                 452                 457

aat caa gag aca gac cca ctc tgt gca gag tgc cgg ctg gtg cga cag      1503
Asn Gln Glu Thr Asp Pro Leu Cys Ala Glu Cys Arg Leu Val Arg Gln
458                 463                 468                 473

gat ccc ttg ccc caa gac ctt gtg atg ttc cta cat gcc cta cgc tat      1551
Asp Pro Leu Pro Gln Asp Leu Val Met Phe Leu His Ala Leu Arg Tyr
474                 479                 484                 489

aaa ggg cca ggc ttt gag tac ttt tca cca atg cct gcc tgg gca cag      1599
Lys Gly Pro Gly Phe Glu Tyr Phe Ser Pro Met Pro Ala Trp Ala Gln
490                 495                 500                 505

gat gac tgg caa aag gac tga gg gtgtggccaa tggagggatt gcttcttggg      1652
Asp Asp Trp Gln Lys Asp  *
506                 511
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gttttcttcc ggcttctttt ttattactga tgtaaaattc acataacata aaattaacca   1892

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                                       Met Gln Lys Phe Leu Gly
                                        1

tca ttt ttt att ggc tgg gat ctt gat ctg tat cat gaa gaa tca gat     161
Ser Phe Phe Ile Gly Trp Asp Leu Asp Leu Tyr His Glu Glu Ser Asp
  7                  12                  17                  22

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Gln Lys Ala Gln Val Asn Thr Ser Asp Leu Asn Glu Glu Leu Gly Gln
 23                  28                  33                  38

gta gag tac gtg ttt aca gat aaa act ggt aca ctg aca gaa aat gag     257
Val Glu Tyr Val Phe Thr Asp Lys Thr Gly Thr Leu Thr Glu Asn Glu
 39                  44                  49                  54

atg cag ttt cgg gaa tgt tca att aat ggc atg aaa tac caa gaa att     305
Met Gln Phe Arg Glu Cys Ser Ile Asn Gly Met Lys Tyr Gln Glu Ile
 55                  60                  65                  70

aat ggt aga ctt gta ccc gaa gga cca aca cca gac tct tca gaa gga     353
Asn Gly Arg Leu Val Pro Glu Gly Pro Thr Pro Asp Ser Ser Glu Gly
 71                  76                  81                  86

aac tta tct tat ctt agt agt tta tcc cat ctt aac aac tta tcc cat     401
Asn Leu Ser Tyr Leu Ser Ser Leu Ser His Leu Asn Asn Leu Ser His
 87                  92                  97                 102
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ctt aca acc agt tcc tct ttc aga acc agt cct gaa aat gaa act gaa      449
Leu Thr Thr Ser Ser Ser Phe Arg Thr Ser Pro Glu Asn Glu Thr Glu
103                 108                 113                 118

cta att aaa gaa cat gat ctc ttc ttt aaa gca gtc agt ctc tgt cac      497
Leu Ile Lys Glu His Asp Leu Phe Phe Lys Ala Val Ser Leu Cys His
119                 124                 129                 134

act gta cag att aac aat gtt caa act gac tgc act ggt gat ggt ccc      545
Thr Val Gln Ile Asn Asn Val Gln Thr Asp Cys Thr Gly Asp Gly Pro
135                 140                 145                 150

tgg caa tcc aac ctg gca cca tcg cag ttg gag tac tat gca tct tca      593
Trp Gln Ser Asn Leu Ala Pro Ser Gln Leu Glu Tyr Tyr Ala Ser Ser
151                 156                 161                 166

cca gat gaa aag gct cta gta gaa gct gct gca agg att ggt att gtg      641
Pro Asp Glu Lys Ala Leu Val Glu Ala Ala Ala Arg Ile Gly Ile Val
167                 172                 177                 182

ctt att ggc aat tct gaa gaa act atg gag gtt aaa act ctt gga aaa      689
Leu Ile Gly Asn Ser Glu Glu Thr Met Glu Val Lys Thr Leu Gly Lys
183                 188                 193                 198

ctg gaa cgg tac aaa ctg ctt cat att ctg gaa ttt gat tca gat cgt      737
Leu Glu Arg Tyr Lys Leu Leu His Ile Leu Glu Phe Asp Ser Asp Arg
199                 204                 209                 214

agg aga atg agt gta att gtt cag gca cct tca ggt gag aag tta tta      785
Arg Arg Met Ser Val Ile Val Gln Ala Pro Ser Gly Glu Lys Leu Leu
215                 220                 225                 230

ttt gct aaa gga gct gag tca tca att ctc cct aaa tgt ata ggt gga      833
Phe Ala Lys Gly Ala Glu Ser Ser Ile Leu Pro Lys Cys Ile Gly Gly
231                 236                 241                 246

gaa ata gaa aaa acc aga att cat gta gat gaa ttt gct ttg aaa ggg      881
Glu Ile Glu Lys Thr Arg Ile His Val Asp Glu Phe Ala Leu Lys Gly
247                 252                 257                 262

cta aga act ctg tgt ata gca tat aga aaa ttt aca tca aaa gag tat      929
Leu Arg Thr Leu Cys Ile Ala Tyr Arg Lys Phe Thr Ser Lys Glu Tyr
263                 268                 273                 278

gag gaa ata gat aaa cgc ata ttt gaa gcc agg act gcc ttg cag cag      977
Glu Glu Ile Asp Lys Arg Ile Phe Glu Ala Arg Thr Ala Leu Gln Gln
279                 284                 289                 294

cgg gaa gag aaa ttg gca gct gtt ttc cag ttc ata gag aaa gac ctg     1025
Arg Glu Glu Lys Leu Ala Ala Val Phe Gln Phe Ile Glu Lys Asp Leu
295                 300                 305                 310

ata tta ctt gga gcc aca gca gta gaa gac aga cta caa gat aaa gtt     1073
Ile Leu Leu Gly Ala Thr Ala Val Glu Asp Arg Leu Gln Asp Lys Val
311                 316                 321                 326
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cga gaa act att gaa gca ttg aga atg gct ggt atc aaa gta tgg gta      1121
Arg Glu Thr Ile Glu Ala Leu Arg Met Ala Gly Ile Lys Val Trp Val
327                 332                 337                 342

ctt act ggg gat aaa cat gaa aca gct gtt agt gtg agt tta tca tgt      1169
Leu Thr Gly Asp Lys His Glu Thr Ala Val Ser Val Ser Leu Ser Cys
343                 348                 353                 358

ggc cat ttt cat aga acc atg aac atc ctt gaa ctt ata aac cag aaa      1217
Gly His Phe His Arg Thr Met Asn Ile Leu Glu Leu Ile Asn Gln Lys
359                 364                 369                 374

tca gac agc gag tgt gct gaa caa ttg agg cag ctt gcc aga aga att      1265
Ser Asp Ser Glu Cys Ala Glu Gln Leu Arg Gln Leu Ala Arg Arg Ile
375                 380                 385                 390

aca gag gat cat gtg att cag cat ggg ctg gta gtg gat ggg acc agc      1313
Thr Glu Asp His Val Ile Gln His Gly Leu Val Val Asp Gly Thr Ser
391                 396                 401                 406

cta tct ctt gca ctc agg gag cat gaa aaa cta ttt atg gaa gtt tgc      1361
Leu Ser Leu Ala Leu Arg Glu His Glu Lys Leu Phe Met Glu Val Cys
407                 412                 417                 422

aga aat tgt tca gct gta tta tgc tgt cgt atg gct cca ctg cag aaa      1409
Arg Asn Cys Ser Ala Val Leu Cys Cys Arg Met Ala Pro Leu Gln Lys
423                 428                 433                 438

gca aaa gta ata aga cta ata aaa ata tca cct gag aaa cct ata aca      1457
Ala Lys Val Ile Arg Leu Ile Lys Ile Ser Pro Glu Lys Pro Ile Thr
439                 444                 449                 454

ttg gct gtt ggt gat ggt gct aat gac gta agc atg ata caa gaa gcc      1505
Leu Ala Val Gly Asp Gly Ala Asn Asp Val Ser Met Ile Gln Glu Ala
455                 460                 465                 470

cat gtt ggc ata gga atc atg ggt aaa gaa gga aga cag gct gca aga      1553
His Val Gly Ile Gly Ile Met Gly Lys Glu Gly Arg Gln Ala Ala Arg
471                 476                 481                 486

aac agt gac tat gca ata gcc aga ttt aag ttc ctc tcc aaa ttg ctt      1601
Asn Ser Asp Tyr Ala Ile Ala Arg Phe Lys Phe Leu Ser Lys Leu Leu
487                 492                 497                 502

ttt gtt cat ggt cat ttt tat tat att aga ata gct acc ctt gta cag      1649
Phe Val His Gly His Phe Tyr Tyr Ile Arg Ile Ala Thr Leu Val Gln
503                 508                 513                 518

tat ttt ttt tat aag aat gtg tgc ttt atc aca ccc cag ttt tta tat      1697
Tyr Phe Phe Tyr Lys Asn Val Cys Phe Ile Thr Pro Gln Phe Leu Tyr
519                 524                 529                 534

cag ttc tac tgt ttg ttt tct cag caa aca ttg tat gac agc gtg tac      1745
Gln Phe Tyr Cys Leu Phe Ser Gln Gln Thr Leu Tyr Asp Ser Val Tyr
535                 540                 545                 550

ctg act tta tac aat att tgt ttt act tcc cta cct att ctg ata tat      1793
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Leu Thr Leu Tyr Asn Ile Cys Phe Thr Ser Leu Pro Ile Leu Ile Tyr
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agt ctt ttg gaa cag cat gta gac cct cat gtg tta caa aat aag ccc      1841
Ser Leu Leu Glu Gln His Val Asp Pro His Val Leu Gln Asn Lys Pro
567                 572                 577                 582

acc ctt tat cga gac att agt aaa aac cgc ctc tta agt att aaa aca      1889
Thr Leu Tyr Arg Asp Ile Ser Lys Asn Arg Leu Leu Ser Ile Lys Thr
583                 588                 593                 598

ttt ctt tat tgg acc atc ctg ggc ttc agt cat gcc ttt att ttc ttt      1937
Phe Leu Tyr Trp Thr Ile Leu Gly Phe Ser His Ala Phe Ile Phe Phe
599                 604                 609                 614

ttt gga tcc tat tta cta ata ggg aaa gat aca tct ctg ctt gga aat      1985
Phe Gly Ser Tyr Leu Leu Ile Gly Lys Asp Thr Ser Leu Leu Gly Asn
615                 620                 625                 630

ggc cag atg ttt gga aac tgg aca ttt ggc act ttg gtc ttc aca gtc      2033
Gly Gln Met Phe Gly Asn Trp Thr Phe Gly Thr Leu Val Phe Thr Val
631                 636                 641                 646

atg gtt att aca gtc aca gta aag atg gct ctg gaa act cat ttt tgg      2081
Met Val Ile Thr Val Thr Val Lys Met Ala Leu Glu Thr His Phe Trp
647                 652                 657                 662

act tgg atc aac cat ctc gtt acc tgg gga tct att ata ttt tat ttt      2129
Thr Trp Ile Asn His Leu Val Thr Trp Gly Ser Ile Ile Phe Tyr Phe
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gta ttt tcc ttg ttt tat gga ggg att ctc tgg cca ttt ttg ggc tcc      2177
Val Phe Ser Leu Phe Tyr Gly Gly Ile Leu Trp Pro Phe Leu Gly Ser
679                 684                 689                 694

cag aat atg tat ttt gtg ttt att cag ctc ctg tca agt ggt tct gct      2225
Gln Asn Met Tyr Phe Val Phe Ile Gln Leu Leu Ser Ser Gly Ser Ala
695                 700                 705                 710

tgg ttt gcc ata atc ctc atg gtt gtt aca tgt cta ttt ctt gat atc      2273
Trp Phe Ala Ile Ile Leu Met Val Val Thr Cys Leu Phe Leu Asp Ile
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ata aag aag gtc ttt gac cga cac ctc cac cct aca agt act gaa aag      2321
Ile Lys Lys Val Phe Asp Arg His Leu His Pro Thr Ser Thr Glu Lys
727                 732                 737                 742

gca cag ctt act gaa aca aat gca ggt atc aag tgc ttg gac tcc atg      2369
Ala Gln Leu Thr Glu Thr Asn Ala Gly Ile Lys Cys Leu Asp Ser Met
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tgc tgt ttc ccg gaa gga gaa gca gcg tgt gca tct gtt gga aga atg      2417
Cys Cys Phe Pro Glu Gly Glu Ala Ala Cys Ala Ser Val Gly Arg Met
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Leu Glu Arg Val Ile Gly Arg Cys Ser Pro Thr His Ile Ser Arg Ser
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791                 796                 801                 806

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Leu Ser Thr Met Asp Ser Ser Thr Cys  *
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Gln Leu Pro Val Asn Asn Leu Gly Ser Leu Arg Lys Ala Arg Lys Thr
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gtg aaa aaa ata ctt agt gac att ggg ttg gaa tac tgt aaa gaa cat       393
Val Lys Lys Ile Leu Ser Asp Ile Gly Leu Glu Tyr Cys Lys Glu His
 19              24                  29                  34

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Ile Glu Asp Phe Lys Gln Phe Glu Pro Asn Asp Phe Tyr Leu Lys Asn
 35              40                  45                  50

act aca tgg gag gat gta gga ctg tgg gac cca tca ctt acg aaa aac       489
Thr Thr Trp Glu Asp Val Gly Leu Trp Asp Pro Ser Leu Thr Lys Asn
 51              56                  61                  66

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Gln Asp Tyr Arg Thr Lys Pro Phe Cys Cys Ser Ala Cys Pro Phe Ser
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 67                 72                  77                  82

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gaa gac ttt gaa aat agg att ctc ctt aat tgc ccc tac tgt acc ttc      633
Glu Asp Phe Glu Asn Arg Ile Leu Leu Asn Cys Pro Tyr Cys Thr Phe
 99                104                 109                 114

aat gca gac aaa aag act ttg gaa aca cac att aaa ata ttt cat gct      681
Asn Ala Asp Lys Lys Thr Leu Glu Thr His Ile Lys Ile Phe His Ala
115                120                 125                 130

ccg aac gcc agc gca cca agt agc agc ctc agc act ttc aaa gat aaa      729
Pro Asn Ala Ser Ala Pro Ser Ser Ser Leu Ser Thr Phe Lys Asp Lys
131                136                 141                 146

aac aaa aat gat ggc ctt aaa cct aag cag gct gac agt gta gag caa      777
Asn Lys Asn Asp Gly Leu Lys Pro Lys Gln Ala Asp Ser Val Glu Gln
147                152                 157                 162

gct gtt tat tac tgt aag aag tgc act tac cga gat cct ctt tat gaa      825
Ala Val Tyr Tyr Cys Lys Lys Cys Thr Tyr Arg Asp Pro Leu Tyr Glu
163                168                 173                 178

ata gtt agg aag cac att tac agg gaa cat ttt cag cat gtg gca gca      873
Ile Val Arg Lys His Ile Tyr Arg Glu His Phe Gln His Val Ala Ala
179                184                 189                 194

cct tac ata gca aag gca gga gaa aaa tca ctc aat ggg gca gtc ccc      921
Pro Tyr Ile Ala Lys Ala Gly Glu Lys Ser Leu Asn Gly Ala Val Pro
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Leu Phe Met Pro Lys Ser Tyr Glu Ala Leu Val Gln His Val Ile Glu
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gac cat gaa cgt ata ggc tat cag gtc act gcc atg att ggg cac aca     1065
Asp His Glu Arg Ile Gly Tyr Gln Val Thr Ala Met Ile Gly His Thr
243                248                 253                 258

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Asn Val Val Val Pro Arg Ser Lys Pro Leu Met Leu Ile Ala Pro Lys
259                264                 269                 274

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Ser Ser Val His Leu Gln Gln Asn Asn Tyr Gly Val Lys Ser Val Gly
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Gln Gly Tyr Ser Val Gly Gln Ser Met Arg Leu Gly Leu Gly Gly Asn
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Ala Pro Val Ser Ile Pro Gln Gln Ser Gln Ser Val Lys Gln Leu Leu
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cca agt gga aac gga agg tct tat ggg ctt ggg tca gag cag agg tcc      1449
Pro Ser Gly Asn Gly Arg Ser Tyr Gly Leu Gly Ser Glu Gln Arg Ser
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387                 392                 397                 402

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Ser Ser Gly Gln Leu Lys Ser Pro Ser Leu Ser Gln Ser Gln Ala Ser
403                 408                 413                 418

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Arg Val Leu Gly Gln Ser Ser Ser Lys Pro Ala Ala Ala Ala Thr Gly
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Pro Pro Pro Gly Asn Thr Ser Ser Thr Gln Lys Trp Lys Ile Cys Thr
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Ile Cys Asn Glu Leu Phe Pro Glu Asn Val Tyr Ser Val His Phe Glu
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ccc aca gat act ctg ctc aac cat atg tta att cat ggt ctg tct tgt      1833
Pro Thr Asp Thr Leu Leu Asn His Met Leu Ile His Gly Leu Ser Cys
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Lys Leu Thr Tyr Lys Cys Ile His Cys Leu Gly Val Tyr Thr Ser Asn
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Glu Phe Pro Leu Leu Lys Lys Arg Lys Leu Asp Asp Asp Ser Asp Ser
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Lys His Glu Met Asp Phe Asp Ala Glu Trp Leu Phe Glu Asn His Asp
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Val Glu Pro Lys Ile Ser Asn Asp Asn Pro Glu Glu His Val Leu Lys
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Ser Leu Ala Gly Val Lys Leu Ser Ser Gln Gln Ala  *
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cagctcggcg cggagcgtcc tgtcaggcgg cggccgaggg cgtcgcggac tctccccgcg     240

atg atg ccg atg ata tta act gtt ttc ttg agc aac aat gaa cag att       288
Met Met Pro Met Ile Leu Thr Val Phe Leu Ser Asn Asn Glu Gln Ile
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Leu Thr Glu Val Pro Ile Thr Pro Glu Thr Thr Cys Arg Asp Val Val
17                  22                  27                  32

gaa ttt tgc aag gaa cct gga gaa ggc agc tgc cat tta gct gaa gtg       384
Glu Phe Cys Lys Glu Pro Gly Glu Gly Ser Cys His Leu Ala Glu Val
33                  38                  43                  48

tgg agg gga aat gaa cgt ccc ata ccc ttt gat cat atg atg tac gaa       432
Trp Arg Gly Asn Glu Arg Pro Ile Pro Phe Asp His Met Met Tyr Glu
49                  54                  59                  64

cat ctt cag aaa tgg ggt cca cgg agg gaa gaa gtg aaa ttt ttc ctt       480
His Leu Gln Lys Trp Gly Pro Arg Arg Glu Glu Val Lys Phe Phe Leu
65                  70                  75                  80

cga cac gag gac tcc cca act gag aac agt gaa caa ggt ggc cgt cag       528
Arg His Glu Asp Ser Pro Thr Glu Asn Ser Glu Gln Gly Gly Arg Gln
81                  86                  91                  96

acc caa gag caa cga act cag aga aat gta ata aat gta cct gga gaa       576
Thr Gln Glu Gln Arg Thr Gln Arg Asn Val Ile Asn Val Pro Gly Glu
97                  102                 107                 112
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Lys Arg Thr Glu Asn Gly Val Gly Asn Pro Arg Val Glu Leu Thr Leu
113                 118                 123                 128

tca gag ctc caa gat atg gca gct agg caa cag cag cag att gaa aat      672
Ser Glu Leu Gln Asp Met Ala Ala Arg Gln Gln Gln Gln Ile Glu Asn
129                 134                 139                 144

cag cag cag atg ttg gtt gcc aag gaa cag cgt tta cat ttt cta aag      720
Gln Gln Gln Met Leu Val Ala Lys Glu Gln Arg Leu His Phe Leu Lys
145                 150                 155                 160

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Gln Gln Glu Arg Arg Gln Gln Gln Ser Ile Ser Glu Asn Glu Lys Leu
161                 166                 171                 176

cag aaa ttg aaa gaa cga gtt gaa gcc cag gag aac aag ctg aag aaa      816
Gln Lys Leu Lys Glu Arg Val Glu Ala Gln Glu Asn Lys Leu Lys Lys
177                 182                 187                 192

att cgt gca atg aga gga caa gtc gac tac agc aaa atc atg aac ggc      864
Ile Arg Ala Met Arg Gly Gln Val Asp Tyr Ser Lys Ile Met Asn Gly
193                 198                 203                 208

aat ctg tct gct gaa ata gaa agg ttc agt gcc atg ttc cag gaa aag      912
Asn Leu Ser Ala Glu Ile Glu Arg Phe Ser Ala Met Phe Gln Glu Lys
209                 214                 219                 224

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Lys Gln Glu Val Gln Thr Ala Ile Leu Arg Val Asp Gln Leu Ser Gln
225                 230                 235                 240

caa ttg gaa gat tta aag aaa gga aaa ctg aat ggg ttc cag tct tac     1008
Gln Leu Glu Asp Leu Lys Lys Gly Lys Leu Asn Gly Phe Gln Ser Tyr
241                 246                 251                 256

aat ggc aaa ttg acg gga cca gcg gcg gtg gag tta aaa aga ctg tac     1056
Asn Gly Lys Leu Thr Gly Pro Ala Ala Val Glu Leu Lys Arg Leu Tyr
257                 262                 267                 272

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Gln Glu Leu Gln Ile Arg Asn Gln Leu Asn Gln Glu Gln Asn Ser Lys
273                 278                 283                 288

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289                 294                 299                 304

atg atg gac aag cga atc agt gaa ctg cgt gaa cgt ctc tat ggg aaa     1200
Met Met Asp Lys Arg Ile Ser Glu Leu Arg Glu Arg Leu Tyr Gly Lys
305                 310                 315                 320

aaa att cag ctg aac cgt gtg aat ggc acg tca tca cca cag tcc cct     1248
Lys Ile Gln Leu Asn Arg Val Asn Gly Thr Ser Ser Pro Gln Ser Pro
321                 326                 331                 336
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Leu Ser Thr Ser Gly Arg Val Ala Ala Val Gly Pro Tyr Ile Gln Val
337                 342                 347                 352

ccc agt gcc gga agc ttt cct gtg ctg ggg gac cct ata aag ccc cag      1344
Pro Ser Ala Gly Ser Phe Pro Val Leu Gly Asp Pro Ile Lys Pro Gln
353                 358                 363                 368

tct ctc agt att gcc tca aat gct gct cat gga aga tcc aaa tcc gct      1392
Ser Leu Ser Ile Ala Ser Asn Ala Ala His Gly Arg Ser Lys Ser Ala
369                 374                 379                 384

aat gat gga aac tgg cca aca tta aaa cag aat tct agc tct tcc gtg      1440
Asn Asp Gly Asn Trp Pro Thr Leu Lys Gln Asn Ser Ser Ser Ser Val
385                 390                 395                 400

aaa cca gtg cag gtg gcc ggt gca gac tgg aag gat ccg agc gtg gag      1488
Lys Pro Val Gln Val Ala Gly Ala Asp Trp Lys Asp Pro Ser Val Glu
401                 406                 411                 416

ggg tct gtc aag cag ggc act gtc tcc agc cag cct gtg ccc ttc tca      1536
Gly Ser Val Lys Gln Gly Thr Val Ser Ser Gln Pro Val Pro Phe Ser
417                 422                 427                 432

gca ctg gga ccc acg gag aag ccg ggc atc gag att ggt aaa gtg cca      1584
Ala Leu Gly Pro Thr Glu Lys Pro Gly Ile Glu Ile Gly Lys Val Pro
433                 438                 443                 448

cct ccc atc ccg ggt gta ggc aag cag ctg cct cca agc tat ggg aca      1632
Pro Pro Ile Pro Gly Val Gly Lys Gln Leu Pro Pro Ser Tyr Gly Thr
449                 454                 459                 464

tac cca agt cct aca cct ctg ggt cct ggg tcg aca agc tcc ctg gaa      1680
Tyr Pro Ser Pro Thr Pro Leu Gly Pro Gly Ser Thr Ser Ser Leu Glu
465                 470                 475                 480

agg agg aag gaa ggc agc ttg ccc agg ccc agt gca ggc ctg cca agt      1728
Arg Arg Lys Glu Gly Ser Leu Pro Arg Pro Ser Ala Gly Leu Pro Ser
481                 486                 491                 496

cga cag agg ccc acc ctg ctg ccc gcc aca ggc agc acc ccc cag cca      1776
Arg Gln Arg Pro Thr Leu Leu Pro Ala Thr Gly Ser Thr Pro Gln Pro
497                 502                 507                 512

ggc tcc tca caa cag att cag cag agg att tcc gta ccg cca agt ccc      1824
Gly Ser Ser Gln Gln Ile Gln Gln Arg Ile Ser Val Pro Pro Ser Pro
513                 518                 523                 528

acg tac ccg cca gcg gga cca cct gca ttt cca gct ggg gac agc aag      1872
Thr Tyr Pro Pro Ala Gly Pro Pro Ala Phe Pro Ala Gly Asp Ser Lys
529                 534                 539                 544

cct gaa ctc cca ctg aca gtg gcc att agg cct ttc ctg gct gat aaa      1920
Pro Glu Leu Pro Leu Thr Val Ala Ile Arg Pro Phe Leu Ala Asp Lys
545                 550                 555                 560

ggg tca agg cca cag tct ccc agg aaa gga ccc cag aca gtg aat tca      1968
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agt tcc ata tac tcc atg tac ctc cag caa gcc aca cca cct aag aat      2016
Ser Ser Ile Tyr Ser Met Tyr Leu Gln Gln Ala Thr Pro Pro Lys Asn
577                 582                 587                 592

tac cag ccg gca gca cac agc gcc tta aat aag tca gtt aaa gca gtg      2064
Tyr Gln Pro Ala Ala His Ser Ala Leu Asn Lys Ser Val Lys Ala Val
593                 598                 603                 608

tat ggt aag ccc gtt tta cct tcg ggt tca acc tct cca tcg ccg ctg      2112
Tyr Gly Lys Pro Val Leu Pro Ser Gly Ser Thr Ser Pro Ser Pro Leu
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Pro Ala Asp Gly Ser Thr Val Glu Ser Leu Pro Arg Pro Leu Ser Pro
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Thr Lys Leu Thr Pro Ile Val His Ser Pro Leu Arg Tyr Gln Ser Asp
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gca gac ctg gag gcc ctc cgc agg aag ctg gcc aac gcg ccc cgg ccc      2352
Ala Asp Leu Glu Ala Leu Arg Arg Lys Leu Ala Asn Ala Pro Arg Pro
689                 694                 699                 704

ctg aaa aag cgc agc tcc atc aca gag ccc gag ggc ccc ggc ggg ccc      2400
Leu Lys Lys Arg Ser Ser Ile Thr Glu Pro Glu Gly Pro Gly Gly Pro
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Asn Ile Gln Lys Leu Leu Tyr Gln Arg Phe Asn Thr Leu Ala Gly Gly
721                 726                 731                 736

atg gag ggc acc cct ttc tac cag ccc agc ccc tcc cag gac ttc atg      2496
Met Glu Gly Thr Pro Phe Tyr Gln Pro Ser Pro Ser Gln Asp Phe Met
737                 742                 747                 752

ggc acc ttg gcc gat gtg gac aat gga aac acc aat gcc aat gga aac      2544
Gly Thr Leu Ala Asp Val Asp Asn Gly Asn Thr Asn Ala Asn Gly Asn
753                 758                 763                 768

ctg gaa gag ctc ccc cct gcc cag ccc aca gcc cca ctc ccc gct gag      2592
Leu Glu Glu Leu Pro Pro Ala Gln Pro Thr Ala Pro Leu Pro Ala Glu
769                 774                 779                 784

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Pro Ala Pro Ser Ser Asp Ala Asn Asp Asn Glu Leu Pro Ser Pro Glu
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gca gag gac aat aac aac aac gtg gcc acg gtc ccc acc acg gag cag      2736
Ala Glu Asp Asn Asn Asn Asn Val Ala Thr Val Pro Thr Thr Glu Gln
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Pro Pro Ala Pro Leu Pro Pro Ala Ser His Pro Pro Ala Thr Ser Thr
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Gly Leu Arg Val Arg Phe Asn Pro Leu Ala Leu Leu Leu Asp Ala Ser
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Leu Glu Gly Glu Phe Asp Leu Val Gln Arg Ile Ile Tyr Glu Val Glu
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gat ccc agc aag ccc aac gac gaa ggg atc acc cca ctg cac aac gcc      3024
Asp Pro Ser Lys Pro Asn Asp Glu Gly Ile Thr Pro Leu His Asn Ala
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Val Cys Ala Gly His His His Ile Val Lys Phe Leu Leu Asp Phe Gly
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Val Asn Val Asn Ala Ala Asp Ser Asp Gly Trp Thr Pro Leu His Cys
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Ala Ala Ser Cys Asn Ser Val His Leu Cys Lys Gln Leu Val Glu Ser
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His Glu Gly Asp Ala Leu Thr Ile Leu Arg Arg Lys Asp Glu Ser Glu
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aaa aac ctg ctg ggg ctg tat cca cgg atc aaa ccc cga cag cga aca      3504
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cttgtagagc agcccgacca caggagcatg gccgctgcca gcccagacgc tgctgacgct   4880

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                                     Met Glu Asn Ser Lys Val Leu
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ggt gaa tcg atg gca ggg att tca cag aat gcc aag acc gga gac ctc       221
Gly Glu Ser Met Ala Gly Ile Ser Gln Asn Ala Lys Thr Gly Asp Leu
  8                 13                  18                  23

cct gcc ttt ggg gaa tgt gtg ggg att gca tcc aag gct ctc tgt ggg       269
Pro Ala Phe Gly Glu Cys Val Gly Ile Ala Ser Lys Ala Leu Cys Gly
 24                 29                  34                  39

ctg aca gag gct gca gcc cag gct gca tac ttg gtt ggc atc ttt gat       317
Leu Thr Glu Ala Ala Ala Gln Ala Ala Tyr Leu Val Gly Ile Phe Asp
 40                 45                  50                  55

cca aac agc cag gca ggc cac cag ggc ctg gtg gac ccc atc cag ttt       365
Pro Asn Ser Gln Ala Gly His Gln Gly Leu Val Asp Pro Ile Gln Phe
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gcc agg gct aac cag gcc atc cag atg gca tgc cag aac ttg gtg gac       413
Ala Arg Ala Asn Gln Ala Ile Gln Met Ala Cys Gln Asn Leu Val Asp
 72                 77                  82                  87

cct ggc agc agc cca tca cag gtc ctg tca gcc gcc aca att gtt gcc       461
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Pro Gly Ser Ser Pro Ser Gln Val Leu Ser Ala Ala Thr Ile Val Ala
88 93 98 103

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Lys His Thr Ser Ala Leu Cys Asn Ala Cys Arg Ile Ala Ser Ser Lys
104 109 114 119

acg gcc aac cca gta gcc aag agg cac ttc gtc cag tcg gcc aag gaa 557
Thr Ala Asn Pro Val Ala Lys Arg His Phe Val Gln Ser Ala Lys Glu
120 125 130 135

gtc gcc aac agc act gcc aac ctg gtg aag acc atc aag gcc ctg gat 605
Val Ala Asn Ser Thr Ala Asn Leu Val Lys Thr Ile Lys Ala Leu Asp
136 141 146 151

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152 157 162 167

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Pro Leu Ile Glu Ala Val Glu Asn Leu Thr Ala Phe Ala Ser Asn Pro
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Gln Glu Pro Ile Leu Val Ser Ala Lys Thr Met Leu Glu Ser Ser Ser
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Pro Thr Trp Ser Val Leu Ala Gly His Ser His Thr Val Ser Asp Ser
232 237 242 247

atc aag agt ctc atc act tct atc agg gac aag gcc cct gga cag agg 941
Ile Lys Ser Leu Ile Thr Ser Ile Arg Asp Lys Ala Pro Gly Gln Arg
248 253 258 263

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Glu Cys Asp Tyr Ser Ile Asp Gly Ile Asn Arg Cys Ile Arg Asp Ile
264 269 274 279

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280 285 290 295

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Ala Ala Gln Leu Gly His Lys Val Thr Gln Leu Ala Ser Tyr Phe Glu
328 333 338 343

ccc ttg atc tta gcc gca gtt ggt gtg gcc tcc aag att ctt gat cat 1229
Pro Leu Ile Leu Ala Ala Val Gly Val Ala Ser Lys Ile Leu Asp His
344 349 354 359

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Gln Gln Gln Met Thr Val Leu Asp Gln Thr Lys Thr Leu Ala Glu Ser
360 365 370 375

gcc ttg cag atg ttg tat gca gcc aaa gaa ggt ggc gga aac ccc aag 1325
Ala Leu Gln Met Leu Tyr Ala Ala Lys Glu Gly Gly Gly Asn Pro Lys
376 381 386 391

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Ala Gln His Thr His Asp Ala Ile Thr Glu Ala Ala Gln Leu Met Lys
392 397 402 407

gaa gcc gtg gat gac atc atg gtg acg ctg aac gaa gct gcc agt gaa 1421
Glu Ala Val Asp Asp Ile Met Val Thr Leu Asn Glu Ala Ala Ser Glu
408 413 418 423

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Val Gly Leu Val Gly Gly Met Val Asp Ala Ile Ala Glu Ala Met Ser
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Lys Leu Asp Glu Gly Thr Pro Pro Glu Pro Lys Gly Thr Phe Val Asp
440 445 450 455

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Tyr Gln Thr Thr Val Val Lys Tyr Ser Lys Ser Ile Ala Val Thr Ala
456 461 466 471

cag gaa atg atg act aag tcg gtt act aac ccg gag gag ttg gga gga 1613
Gln Glu Met Met Thr Lys Ser Val Thr Asn Pro Glu Glu Leu Gly Gly
472 477 482 487

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488 493 498 503

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Gln Met Ala Ala Ala Thr Ala Glu Pro Glu Glu Ile Gly Phe Gln Ile
504 509 514 519

cgc act cgt gtg cag gac ctg ggc cac ggc tgt atc ttc ctg gtg cag 1757
Arg Thr Arg Val Gln Asp Leu Gly His Gly Cys Ile Phe Leu Val Gln
520 525 530 535

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Lys Ala Gly Ala Leu Gln Val Cys Pro Thr Asp Ser Tyr Thr Lys Arg
536 541 546 551

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Glu Leu Ile Glu Cys Ala Arg Ala Val Thr Glu Lys Val Ser Leu Val
552 557 562 567

ctc tcg gct ctc cag gcc ggg aac aaa gga acc cag gca tgc att aca 1901
Leu Ser Ala Leu Gln Ala Gly Asn Lys Gly Thr Gln Ala Cys Ile Thr
568 573 578 583

gcc gcc acc gct gtg tct ggg atc att gcc gac ctg gac acc acc att 1949
Ala Ala Thr Ala Val Ser Gly Ile Ile Ala Asp Leu Asp Thr Thr Ile
584 589 594 599

atg ttt gca aca gcg ggg acg ctg aat gca gag aac agt gag acc ttc 1997
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600 605 610 615

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Ala Asp His Arg Glu Asn Ile Leu Lys Thr Ala Lys Ala Leu Val Glu
616 621 626 631

gac acg aaa cta ctt gtg tca gga gct gcg tcc act cct gac aag ctg 2093
Asp Thr Lys Leu Leu Val Ser Gly Ala Ala Ser Thr Pro Asp Lys Leu
632 637 642 647

gcc cag gcg gcc cag tcc tca gca gcc acc atc acc cag ctc gca gaa 2141
Ala Gln Ala Ala Gln Ser Ser Ala Ala Thr Ile Thr Gln Leu Ala Glu
648 653 658 663

gtg gtc aag ctg ggg gca gcc agc ctg ggc tcc gac gac ccc gag acc 2189
Val Val Lys Leu Gly Ala Ala Ser Leu Gly Ser Asp Asp Pro Glu Thr
664 669 674 679

cag gtg gtt ttg atc aat gcc atc aaa gat gtg gcc aag gcc ctt tct 2237
Gln Val Val Leu Ile Asn Ala Ile Lys Asp Val Ala Lys Ala Leu Ser
680 685 690 695

gat ctc atc agt gct acc aag gga gct gcc agc aag cca gtg gac gac 2285
Asp Leu Ile Ser Ala Thr Lys Gly Ala Ala Ser Lys Pro Val Asp Asp
696 701 706 711

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Pro Ser Met Tyr Gln Leu Lys Gly Ala Ala Lys Val Met Val Thr Asn
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Val Thr Ser Leu Leu Lys Thr Val Lys Ala Val Glu Asp Glu Ala Thr
728 733 738 743

cgg ggc acc agg gcg ctt gag gcc aca att gaa tgc ata aag cag gag 2429
Arg Gly Thr Arg Ala Leu Glu Ala Thr Ile Glu Cys Ile Lys Gln Glu
744 749 754 759

ctt acg gtg ttc cag tca aaa gac gta cct gaa aag aca tca tca cct 2477
Leu Thr Val Phe Gln Ser Lys Asp Val Pro Glu Lys Thr Ser Ser Pro
760 765 770 775

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gcc gtg gca gct ggg aac tca tgt aga cag gag gac gtg att gct act      2573
Ala Val Ala Ala Gly Asn Ser Cys Arg Gln Glu Asp Val Ile Ala Thr
792                 797                 802                 807

gcc aac ctg agc cgg aaa gcc gtg tca gat atg ttg acg gct tgc aag      2621
Ala Asn Leu Ser Arg Lys Ala Val Ser Asp Met Leu Thr Ala Cys Lys
808                 813                 818                 823

caa gca tcc ttc cac ccc gat gtc agt gac gag gtg aga acc aga gcc      2669
Gln Ala Ser Phe His Pro Asp Val Ser Asp Glu Val Arg Thr Arg Ala
824                 829                 834                 839

ttg cgt ttc ggg acg gag tgc acc ctt ggc tac ttg gac ctc ctg gag      2717
Leu Arg Phe Gly Thr Glu Cys Thr Leu Gly Tyr Leu Asp Leu Leu Glu
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His Val Leu Val Ile Leu Gln Lys Pro Thr Pro Glu Phe Lys Gln Gln
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ctg gcc gct ttc tcc aag cga gtc gcc ggc gct gtg aca gag ctc atc      2813
Leu Ala Ala Phe Ser Lys Arg Val Ala Gly Ala Val Thr Glu Leu Ile
872                 877                 882                 887

cag gcg gcg gaa gcc atg aaa gga aca gag tgg gtg gat cca gaa gac      2861
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888                 893                 898                 903

cca act gtc att gca gaa aca gag tta ctg ggg gct gca gca tcc atc      2909
Pro Thr Val Ile Ala Glu Thr Glu Leu Leu Gly Ala Ala Ala Ser Ile
904                 909                 914                 919

gaa gct gct gct aag aag tta gag caa ctg aag cca aga gca aaa cca      2957
Glu Ala Ala Ala Lys Lys Leu Glu Gln Leu Lys Pro Arg Ala Lys Pro
920                 925                 930                 935

aaa caa gcg gat gag acc ctg gac ttt gag gaa cag atc ttg gaa gct      3005
Lys Gln Ala Asp Glu Thr Leu Asp Phe Glu Glu Gln Ile Leu Glu Ala
936                 941                 946                 951

gct aaa tcc att gct gct gcc aca agc gcc ctg gtc aaa tcg gcc tca      3053
Ala Lys Ser Ile Ala Ala Ala Thr Ser Ala Leu Val Lys Ser Ala Ser
952                 957                 962                 967

gca gcc cag agg gag ctg gtg gcc caa gga aag gtg ggc tcc atc cct      3101
Ala Ala Gln Arg Glu Leu Val Ala Gln Gly Lys Val Gly Ser Ile Pro
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gcc aat gct gca gac gac gga cag tgg tca cag ggg ctg att tct gct      3149
Ala Asn Ala Ala Asp Asp Gly Gln Trp Ser Gln Gly Leu Ile Ser Ala
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gcc cgg atg gtg gcg gct gcg acc agc agt ctc tgt gag gcg gcc aat      3197
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 Ala Arg Met Val Ala Ala Ala Thr Ser Ser Leu Cys Glu Ala Ala Asn
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 gcc tcc gtt cag gga cac gcc agc gag gag aag ctc atc tca tct gcc      3245
 Ala Ser Val Gln Gly His Ala Ser Glu Glu Lys Leu Ile Ser Ser Ala
1016                1021                1026                1031

 aag cag gtc gcc gct tcc acg gct cag ctg ctg gtg gcc tgc aag gtg      3293
 Lys Gln Val Ala Ala Ser Thr Ala Gln Leu Leu Val Ala Cys Lys Val
1032                1037                1042                1047

 aag gcc gac cag gat tca gag gcc atg agg cgg cta cag gcg gca gga      3341
 Lys Ala Asp Gln Asp Ser Glu Ala Met Arg Arg Leu Gln Ala Ala Gly
1048                1053                1058                1063

 aat gct gtg aaa aga gcc tca gac aat ctt gtc cgt gca gcc cag aag      3389
 Asn Ala Val Lys Arg Ala Ser Asp Asn Leu Val Arg Ala Ala Gln Lys
1064                1069                1074                1079

 gca gct ttt ggc aaa gct gat gac gac gat gtt gta gtg aaa acc aag      3437
 Ala Ala Phe Gly Lys Ala Asp Asp Asp Asp Val Val Val Lys Thr Lys
1080                1085                1090                1095

 ttt gtg ggg ggc att gct cag atc atc gcc gcc cag gaa gaa atg cta      3485
 Phe Val Gly Gly Ile Ala Gln Ile Ile Ala Ala Gln Glu Glu Met Leu
1096                1101                1106                1111

 aag aaa gag cga gaa ctg gaa gaa gca agg aaa aaa ctg gcc caa atc      3533
 Lys Lys Glu Arg Glu Leu Glu Glu Ala Arg Lys Lys Leu Ala Gln Ile
1112                1117                1122                1127

 cgc cag cag cag tat aag ttt tta ccc acc gag ctg agg gaa gat gag      3581
 Arg Gln Gln Gln Tyr Lys Phe Leu Pro Thr Glu Leu Arg Glu Asp Glu
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 Gly  *
1144

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Gly Leu Ser Asp Cys Leu Trp Ala Trp Ile Leu Leu Leu Ser Thr Leu
6                   11                  16                  21

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Thr Gly Arg Ser Tyr Gly Gln Pro Ser Leu Gln Asp Glu Leu Lys Asp
22                  27                  32                  37

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Asn Thr Thr Val Phe Thr Arg Ile Leu Asp Arg Leu Leu Asp Gly Tyr
38                  43                  48                  53

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Asp Asn Arg Leu Arg Pro Gly Leu Gly Glu Arg Val Thr Glu Val Lys
54                  59                  64                  69

act gat atc ttc gtc acc agt ttc gga ccc gtt tca gac cat gat atg       714
Thr Asp Ile Phe Val Thr Ser Phe Gly Pro Val Ser Asp His Asp Met
70                  75                  80                  85

gaa tat aca ata gat gta ttt ttc cgt caa agc tgg aag gat gaa agg       762
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tta aaa ttt aaa gga cct atg aca gtc ctc cgg tta aat aac cta atg      810
Leu Lys Phe Lys Gly Pro Met Thr Val Leu Arg Leu Asn Asn Leu Met
102                 107                 112                 117

gca agt aaa atc tgg act ccg gac aca ttt ttc cac aat gga aag aag      858
Ala Ser Lys Ile Trp Thr Pro Asp Thr Phe Phe His Asn Gly Lys Lys
118                 123                 128                 133

tca gtg gcc cac aac atg acc atg ccc aac aaa ctc ctg cgg atc aca      906
Ser Val Ala His Asn Met Thr Met Pro Asn Lys Leu Leu Arg Ile Thr
134                 139                 144                 149

gag gat ggc acc ttg ctg tac acc atg agg ctg aca gtg aga gct gaa      954
Glu Asp Gly Thr Leu Leu Tyr Thr Met Arg Leu Thr Val Arg Ala Glu
150                 155                 160                 165

tgt ccg atg cat ttg gag gac ttc cct atg gat gcc cat gct tgc cca     1002
Cys Pro Met His Leu Glu Asp Phe Pro Met Asp Ala His Ala Cys Pro
166                 171                 176                 181

cta aaa ttt gga agt tat gct tat aca aga gca gaa gtt gtt tat gaa     1050
Leu Lys Phe Gly Ser Tyr Ala Tyr Thr Arg Ala Glu Val Val Tyr Glu
182                 187                 192                 197

tgg acc aga gag cca gca cgc tca gtg gtt gta gca gaa gat gga tca     1098
Trp Thr Arg Glu Pro Ala Arg Ser Val Val Val Ala Glu Asp Gly Ser
198                 203                 208                 213

cgt cta aac cag tat gac ctt ctt gga caa aca gta gac tct gga att     1146
Arg Leu Asn Gln Tyr Asp Leu Leu Gly Gln Thr Val Asp Ser Gly Ile
214                 219                 224                 229

gtc cag tca agt aca gga gaa tat gtt gtt atg acc act cat ttc cac     1194
Val Gln Ser Ser Thr Gly Glu Tyr Val Val Met Thr Thr His Phe His
230                 235                 240                 245

ttg aag aga aag att ggc tac ttt gtt att caa aca tac ctg cca tgc     1242
Leu Lys Arg Lys Ile Gly Tyr Phe Val Ile Gln Thr Tyr Leu Pro Cys
246                 251                 256                 261

ata atg aca gtg att ctc tca caa gtc tcc ttc tgg ctc aac aga gag     1290
Ile Met Thr Val Ile Leu Ser Gln Val Ser Phe Trp Leu Asn Arg Glu
262                 267                 272                 277

tct gta cca gca aga act gtc ttt gga gta aca act gtg ctc acc atg     1338
Ser Val Pro Ala Arg Thr Val Phe Gly Val Thr Thr Val Leu Thr Met
278                 283                 288                 293

aca aca ttg agc atc agt gcc aga aac tcc ctc cct aag gtg gct tat     1386
Thr Thr Leu Ser Ile Ser Ala Arg Asn Ser Leu Pro Lys Val Ala Tyr
294                 299                 304                 309

gca aca gct atg gat tgg ttt att gcc gtg tgc tat gcc ttt gtg ttc     1434
Ala Thr Ala Met Asp Trp Phe Ile Ala Val Cys Tyr Ala Phe Val Phe
310                 315                 320                 325

tca gct ctg att gag ttt gcc aca gta aac tat ttc act aag aga ggt     1482
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Ser Ala Leu Ile Glu Phe Ala Thr Val Asn Tyr Phe Thr Lys Arg Gly
326                 331                 336                 341

tat gca tgg gat ggc aaa agt gtg gtt cca gaa aag cca aag aaa gta      1530
Tyr Ala Trp Asp Gly Lys Ser Val Val Pro Glu Lys Pro Lys Lys Val
342                 347                 352                 357

aag gat cct ctt att aag aaa aac aac act tac gct cca aca gca acc      1578
Lys Asp Pro Leu Ile Lys Lys Asn Asn Thr Tyr Ala Pro Thr Ala Thr
358                 363                 368                 373

agc tac acc cct aat ttg gcc agg ggc gac ccg ggc tta gcc acc att      1626
Ser Tyr Thr Pro Asn Leu Ala Arg Gly Asp Pro Gly Leu Ala Thr Ile
374                 379                 384                 389

gct aaa agt gca acc ata gaa cct aaa gag gtc aag ccc gaa aca aaa      1674
Ala Lys Ser Ala Thr Ile Glu Pro Lys Glu Val Lys Pro Glu Thr Lys
390                 395                 400                 405

cca cca gaa ccc aag aaa acc ttt aac agt gtc agc aaa att gac cga      1722
Pro Pro Glu Pro Lys Lys Thr Phe Asn Ser Val Ser Lys Ile Asp Arg
406                 411                 416                 421

ctg tca aga ata gcc ttc ccg ctg cta ttt gga atc ttt aac tta gtc      1770
Leu Ser Arg Ile Ala Phe Pro Leu Leu Phe Gly Ile Phe Asn Leu Val
422                 427                 432                 437

tac tgg gct acg tat tta aac aga gag cct cag cta aaa gcc ccc aca      1818
Tyr Trp Ala Thr Tyr Leu Asn Arg Glu Pro Gln Leu Lys Ala Pro Thr
438                 443                 448                 453

cca cat caa tag atc ttttactcac attctgttgt tcagttcctc tgcactggga      1873
Pro His Gln  *
454

atttatttat gttctcaacg cagtaattcc catctgcctt tattgcctct gtcttaaaga    1933

atttgaaagt ttccttattt tcataattca tttaagacaa gagacccctg tctg          1987


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cctccaccct taagaagacc tgcatctgtt ggaccaacag acaactatcc ggcttacggc     180

caggggagcc cctgcagctg cacagaacca gtttcttatg tatctggcgg taattgggaa     240

agcttctgag aaagtccatg gggccgatgt     atg gga gat gaa tgt ggt ccc     291
                                     Met Gly Asp Glu Cys Gly Pro
                                      1               5

gga ggc atc caa acg agg gct gtg tgg tgt gct cat gtg gag gga tgg      339
Gly Gly Ile Gln Thr Arg Ala Val Trp Cys Ala His Val Glu Gly Trp
 8                  13                  18                  23

act aca ctg cat act aac tgt aag cag gcc gag aga ccc aat aac cag      387
Thr Thr Leu His Thr Asn Cys Lys Gln Ala Glu Arg Pro Asn Asn Gln
 24                 29                  34                  39

cag aat tgt ttc aaa gtt tgc gat tgg cac aaa gag ttg tac gac tgg      435
Gln Asn Cys Phe Lys Val Cys Asp Trp His Lys Glu Leu Tyr Asp Trp
 40                 45                  50                  55

aga ctg gga cct tgg aat cag tgt cag ccc gtg att tca aaa agc cta      483
Arg Leu Gly Pro Trp Asn Gln Cys Gln Pro Val Ile Ser Lys Ser Leu
 56                 61                  66                  71

gag aaa cct ctt gag tgc att aag ggg gaa gaa ggt att cag gtg agg      531
Glu Lys Pro Leu Glu Cys Ile Lys Gly Glu Glu Gly Ile Gln Val Arg
 72                 77                  82                  87

gag ata gcg tgc atc cag aaa gac aaa gac att cct gcg gag gat atc      579
Glu Ile Ala Cys Ile Gln Lys Asp Lys Asp Ile Pro Ala Glu Asp Ile
 88                 93                  98                  103

atc tgt gag tac ttt gag ccc aag cct ctc ctg gag cag gct tgc ctc      627
Ile Cys Glu Tyr Phe Glu Pro Lys Pro Leu Leu Glu Gln Ala Cys Leu
104                 109                 114                 119

att cct tgc cag caa gat tgc atc gtg tct gaa ttt tct gcc tgg tcc      675
Ile Pro Cys Gln Gln Asp Cys Ile Val Ser Glu Phe Ser Ala Trp Ser
120                 125                 130                 135

gaa tgc tcc aag acc tgc ggc agc ggg ctc cag cac cgg acg cgt cat      723
Glu Cys Ser Lys Thr Cys Gly Ser Gly Leu Gln His Arg Thr Arg His
136                 141                 146                 151

gtg gtg gcg ccc ccg cag ttc gga ggc tct ggc tgt cca aac ctg acg      771
Val Val Ala Pro Pro Gln Phe Gly Gly Ser Gly Cys Pro Asn Leu Thr
152                 157                 162                 167

gag ttc cag gtg tgc caa tcc agt cca tgc gag gcc gag gag ctc agg      819
Glu Phe Gln Val Cys Gln Ser Ser Pro Cys Glu Ala Glu Glu Leu Arg
168                 173                 178                 183

tac agc ctg cat gtg ggg ccc tgg agc acc tgc tca atg ccc cac tcc      867
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Tyr Ser Leu His Val Gly Pro Trp Ser Thr Cys Ser Met Pro His Ser
184                 189                 194                 199

cga caa gta aga caa gca agg aga cgc ggg aag aat aaa gaa cgg gaa      915
Arg Gln Val Arg Gln Ala Arg Arg Arg Gly Lys Asn Lys Glu Arg Glu
200                 205                 210                 215

aag gac cgc agc aaa gga gta aag gat cca gaa gcc cgc gag ctt att      963
Lys Asp Arg Ser Lys Gly Val Lys Asp Pro Glu Ala Arg Glu Leu Ile
216                 221                 226                 231

aag aaa aag aga aac aga aac agg cag aac aga caa gag aac aaa tat     1011
Lys Lys Lys Arg Asn Arg Asn Arg Gln Asn Arg Gln Glu Asn Lys Tyr
232                 237                 242                 247

tgg gac atc cag att gga tat cag acc aga gag gtt atg tgc att aac     1059
Trp Asp Ile Gln Ile Gly Tyr Gln Thr Arg Glu Val Met Cys Ile Asn
248                 253                 258                 263

aag acg ggg aaa gct gct gat tta agc ttt tgc cag caa gag aag ctt     1107
Lys Thr Gly Lys Ala Ala Asp Leu Ser Phe Cys Gln Gln Glu Lys Leu
264                 269                 274                 279

cca atg acc ttc cag tcc tgt gtg atc acc aaa gag tgc cag gtt tcc     1155
Pro Met Thr Phe Gln Ser Cys Val Ile Thr Lys Glu Cys Gln Val Ser
280                 285                 290                 295

gag tgg tca gag tgg agc ccc tgc tca aaa aca tgc cat gac atg gtg     1203
Glu Trp Ser Glu Trp Ser Pro Cys Ser Lys Thr Cys His Asp Met Val
296                 301                 306                 311

tcc cct gca ggc act cgt gta agg aca cga acc atc agg cag ttt ccc     1251
Ser Pro Ala Gly Thr Arg Val Arg Thr Arg Thr Ile Arg Gln Phe Pro
312                 317                 322                 327

att ggc agt gaa aag gag tgt cca gaa ttt gaa gaa aaa gaa ccc tgt     1299
Ile Gly Ser Glu Lys Glu Cys Pro Glu Phe Glu Glu Lys Glu Pro Cys
328                 333                 338                 343

ttg tct caa gga gat gga gtt gtc ccc tgt gcc acg tat ggc tgg aga     1347
Leu Ser Gln Gly Asp Gly Val Val Pro Cys Ala Thr Tyr Gly Trp Arg
344                 349                 354                 359

act aca gag tgg act gag tgc cgt gtg gac cct ttg ctc agt cag cag     1395
Thr Thr Glu Trp Thr Glu Cys Arg Val Asp Pro Leu Leu Ser Gln Gln
360                 365                 370                 375

gac aag agg cgc ggc aac cag acg gcc ctc tgt gga ggg ggc atc cag     1443
Asp Lys Arg Arg Gly Asn Gln Thr Ala Leu Cys Gly Gly Gly Ile Gln
376                 381                 386                 391

acc cga gag gtg tac tgc gtg cag gcc aac gaa aac ctc ctc tca caa     1491
Thr Arg Glu Val Tyr Cys Val Gln Ala Asn Glu Asn Leu Leu Ser Gln
392                 397                 402                 407

tta agt acc cac aag aac aaa gaa gcc tca aag cca atg gac tta aaa     1539
Leu Ser Thr His Lys Asn Lys Glu Ala Ser Lys Pro Met Asp Leu Lys
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408                 413                 418                 423

tta tgc act gga cct atc cct aat act aca cag ctg tgc cac att cct      1587
Leu Cys Thr Gly Pro Ile Pro Asn Thr Thr Gln Leu Cys His Ile Pro
424                 429                 434                 439

tgt cca act gaa tgt gaa gtt tca cct tgg tca gct tgg gga cct tgt      1635
Cys Pro Thr Glu Cys Glu Val Ser Pro Trp Ser Ala Trp Gly Pro Cys
440                 445                 450                 455

act tat gaa aac tgt aat gat cag caa ggg aaa aaa ggc ttc aaa ctg      1683
Thr Tyr Glu Asn Cys Asn Asp Gln Gln Gly Lys Lys Gly Phe Lys Leu
456                 461                 466                 471

agg aag cgg cgc att acc aat gag ccc act gga ggc tct ggg gta acc      1731
Arg Lys Arg Arg Ile Thr Asn Glu Pro Thr Gly Gly Ser Gly Val Thr
472                 477                 482                 487

gga aac tgc cct cac tta ctg gaa gcc att ccc tgt gaa gag cct gcc      1779
Gly Asn Cys Pro His Leu Leu Glu Ala Ile Pro Cys Glu Glu Pro Ala
488                 493                 498                 503

tgt tat gac tgg aaa gca gtg aga ctg gga gac tgc gag cca gat aac      1827
Cys Tyr Asp Trp Lys Ala Val Arg Leu Gly Asp Cys Glu Pro Asp Asn
504                 509                 514                 519

gga aag gag tgt ggt cca ggc acg caa gtt caa gag gtt gtg tgc atc      1875
Gly Lys Glu Cys Gly Pro Gly Thr Gln Val Gln Glu Val Val Cys Ile
520                 525                 530                 535

aac agt gat gga gaa gaa gtt gac aga cag ctg tgc aga gat gcc atc      1923
Asn Ser Asp Gly Glu Glu Val Asp Arg Gln Leu Cys Arg Asp Ala Ile
536                 541                 546                 551

ttc ccc atc cct gtg gcc tgt gat gcc cca tgc ccg aaa gac tgt gtg      1971
Phe Pro Ile Pro Val Ala Cys Asp Ala Pro Cys Pro Lys Asp Cys Val
552                 557                 562                 567

ctc agc aca tgg tct acg tgg tcc tcc tgc tca cac acc tgc tca ggg      2019
Leu Ser Thr Trp Ser Thr Trp Ser Ser Cys Ser His Thr Cys Ser Gly
568                 573                 578                 583

aaa acg aca gaa ggg aaa cag ata cga gca cga tcc att ctg gcc tat      2067
Lys Thr Thr Glu Gly Lys Gln Ile Arg Ala Arg Ser Ile Leu Ala Tyr
584                 589                 594                 599

gcg ggt gaa gaa ggt gga att cgc tgt cca aat agc agt gct ttg caa      2115
Ala Gly Glu Glu Gly Gly Ile Arg Cys Pro Asn Ser Ser Ala Leu Gln
600                 605                 610                 615

gaa gta cga agc tgt aat gag cat cct tgc aca gtg tac cac tgg caa      2163
Glu Val Arg Ser Cys Asn Glu His Pro Cys Thr Val Tyr His Trp Gln
616                 621                 626                 631

act ggt ccc tgg ggc cag tgc att gag gac acc tca gta tcg tcc ttc      2211
Thr Gly Pro Trp Gly Gln Cys Ile Glu Asp Thr Ser Val Ser Ser Phe
632                 637                 642                 647
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aac aca act acg act tgg aat ggg gag gcc tcc tgc tct gtc ggc atg      2259
Asn Thr Thr Thr Thr Trp Asn Gly Glu Ala Ser Cys Ser Val Gly Met
648                 653                 658                 663

cag aca aga aaa gtc atc tgt gtg cga gtc aat gtg ggc caa gtg gga      2307
Gln Thr Arg Lys Val Ile Cys Val Arg Val Asn Val Gly Gln Val Gly
664                 669                 674                 679

ccc aaa aaa tgt cct gaa agc ctt cga cct gaa act gta agg cct tgt      2355
Pro Lys Lys Cys Pro Glu Ser Leu Arg Pro Glu Thr Val Arg Pro Cys
680                 685                 690                 695

ctg ctt cct tgt aag aag gac tgt att gtg acc cca tat agt gac tgg      2403
Leu Leu Pro Cys Lys Lys Asp Cys Ile Val Thr Pro Tyr Ser Asp Trp
696                 701                 706                 711

aca tca tgc ccc tct tcg tgt aaa gaa ggg gac tcc agt atc agg aag      2451
Thr Ser Cys Pro Ser Ser Cys Lys Glu Gly Asp Ser Ser Ile Arg Lys
712                 717                 722                 727

cag tct agg cat cgg gtc atc att cag ctg cca gcc aac ggg ggc cga      2499
Gln Ser Arg His Arg Val Ile Ile Gln Leu Pro Ala Asn Gly Gly Arg
728                 733                 738                 743

gac tgc aca gat ccc ctc tat gaa gag aag gcc tgt gag gca cct caa      2547
Asp Cys Thr Asp Pro Leu Tyr Glu Glu Lys Ala Cys Glu Ala Pro Gln
744                 749                 754                 759

gcg tgc caa agc tac agg tgg aag act cac aaa tgg cgc aga tgc caa      2595
Ala Cys Gln Ser Tyr Arg Trp Lys Thr His Lys Trp Arg Arg Cys Gln
760                 765                 770                 775

tta gtc cct tgg agc gtg caa caa gac agc cct gga gca cag gaa ggc      2643
Leu Val Pro Trp Ser Val Gln Gln Asp Ser Pro Gly Ala Gln Glu Gly
776                 781                 786                 791

tgt ggg cct ggg cga cag gca aga gcc att act tgt cgc aag caa gat      2691
Cys Gly Pro Gly Arg Gln Ala Arg Ala Ile Thr Cys Arg Lys Gln Asp
792                 797                 802                 807

gga gga cag gct gga atc cat gag tgc cta cag tat gca ggc cct gtg      2739
Gly Gly Gln Ala Gly Ile His Glu Cys Leu Gln Tyr Ala Gly Pro Val
808                 813                 818                 823

cca gcc ctt acc cag gcc tgc cag atc ccc tgc cag gat gac tgt caa      2787
Pro Ala Leu Thr Gln Ala Cys Gln Ile Pro Cys Gln Asp Asp Cys Gln
824                 829                 834                 839

ttg acc agc tgg tcc aag ttt tct tca tgc aat gga gac tgt ggt gca      2835
Leu Thr Ser Trp Ser Lys Phe Ser Ser Cys Asn Gly Asp Cys Gly Ala
840                 845                 850                 855

gtt agg acc aga aag cgc act ctt gtt gga aaa agt aaa aaa aaa aaa      2883
Val Arg Thr Arg Lys Arg Thr Leu Val Gly Lys Ser Lys Lys Lys Lys
856                 861                 866                 871
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aaa tgt aaa aat tcc cat ttg tat ccc ctg att gag act cag tat tgt 2931
Lys Cys Lys Asn Ser His Leu Tyr Pro Leu Ile Glu Thr Gln Tyr Cys
872 877 882 887

cct tgt gac aaa tat aat gca caa cct gtg ggg aac tgg tca gac tgt 2979
Pro Cys Asp Lys Tyr Asn Ala Gln Pro Val Gly Asn Trp Ser Asp Cys
888 893 898 903

att tta cca gag gga aaa gtg gaa gtg ttg ctg gga atg aaa gta caa 3027
Ile Leu Pro Glu Gly Lys Val Glu Val Leu Leu Gly Met Lys Val Gln
904 909 914 919

gga gac atc aag gaa tgc gga caa gga tat cgt tac caa gca atg gca 3075
Gly Asp Ile Lys Glu Cys Gly Gln Gly Tyr Arg Tyr Gln Ala Met Ala
920 925 930 935

tgc tac gat caa aat ggc agg ctt gtg gaa aca tct aga tgt aac agc 3123
Cys Tyr Asp Gln Asn Gly Arg Leu Val Glu Thr Ser Arg Cys Asn Ser
936 941 946 951

cat ggt tac att gag gag gcc tgc atc atc ccc tgc ccc tca gac tgc 3171
His Gly Tyr Ile Glu Glu Ala Cys Ile Ile Pro Cys Pro Ser Asp Cys
952 957 962 967

aag ctc agt gag tgg tcc aac tgg tcg cgc tgc agc aag tcc tgt ggg 3219
Lys Leu Ser Glu Trp Ser Asn Trp Ser Arg Cys Ser Lys Ser Cys Gly
968 973 978 983

agt ggt gtg aag gtt cgt tct aaa tgg ctg cgt gaa aaa cca tat aat 3267
Ser Gly Val Lys Val Arg Ser Lys Trp Leu Arg Glu Lys Pro Tyr Asn
984 989 994 999

gga gga agg cct tgc ccc aaa ctg gac cat gtc aac cag gca cag gtg 3315
Gly Gly Arg Pro Cys Pro Lys Leu Asp His Val Asn Gln Ala Gln Val
1000 1005 1010 1015

tat gag gtt gtc cca tgc cac agt gac tgc aac cag tac cta tgg gtc 3363
Tyr Glu Val Val Pro Cys His Ser Asp Cys Asn Gln Tyr Leu Trp Val
1016 1021 1026 1031

aca gag ccc tgg agc atc tgc aag gtg acc ttt gtg aat atg cgg gag 3411
Thr Glu Pro Trp Ser Ile Cys Lys Val Thr Phe Val Asn Met Arg Glu
1032 1037 1042 1047

aac tgt gga gag ggc gtg caa acc cga aaa gtg aga tgc atg cag aat 3459
Asn Cys Gly Glu Gly Val Gln Thr Arg Lys Val Arg Cys Met Gln Asn
1048 1053 1058 1063

aca gca gat ggc cct tct gaa cat gta gag gat tac ctc tgt gac cca 3507
Thr Ala Asp Gly Pro Ser Glu His Val Glu Asp Tyr Leu Cys Asp Pro
1064 1069 1074 1079

gaa gag atg ccc ctg ggc tct aga gtg tgc aaa tta cca tgc cct gag 3555
Glu Glu Met Pro Leu Gly Ser Arg Val Cys Lys Leu Pro Cys Pro Glu
1080 1085 1090 1095

gac tgt gtg ata tct gaa tgg ggt cca tgg acc caa tgt gtt ttg cct 3603

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Asp Cys Val Ile Ser Glu Trp Gly Pro Trp Thr Gln Cys Val Leu Pro
1096                1101                1106                1111

tgc aat caa agc agt ttc cgg caa agg tca gct gat ccc atc aga caa       3651
Cys Asn Gln Ser Ser Phe Arg Gln Arg Ser Ala Asp Pro Ile Arg Gln
1112                1117                1122                1127

cca gct gat gaa gga aga tct tgc cct aat gct gtt gag aaa gaa ccc       3699
Pro Ala Asp Glu Gly Arg Ser Cys Pro Asn Ala Val Glu Lys Glu Pro
1128                1133                1138                1143

tgt aac ctg aac aaa aac tgc tac cac tat gat tat aat gta aca gac       3747
Cys Asn Leu Asn Lys Asn Cys Tyr His Tyr Asp Tyr Asn Val Thr Asp
1144                1149                1154                1159

tgg agt aca tgt cag ctg agt gag aag gca gtt tgt gga aat gga ata       3795
Trp Ser Thr Cys Gln Leu Ser Glu Lys Ala Val Cys Gly Asn Gly Ile
1160                1165                1170                1175

aaa aca agg atg ttg gat tgt gtt cga agt gat ggc aag tca gtt gac       3843
Lys Thr Arg Met Leu Asp Cys Val Arg Ser Asp Gly Lys Ser Val Asp
1176                1181                1186                1191

ctg aaa tat tgt gaa gcg ctt ggc ttg gag aag aac tgg cag atg aac       3891
Leu Lys Tyr Cys Glu Ala Leu Gly Leu Glu Lys Asn Trp Gln Met Asn
1192                1197                1202                1207

acg tcc tgc atg gtg gaa tgc cct gtg aac tgt cag ctt tct gat tgg       3939
Thr Ser Cys Met Val Glu Cys Pro Val Asn Cys Gln Leu Ser Asp Trp
1208                1213                1218                1223

tct cct tgg tca gaa tgt tct caa aca tgt ggc ctc aca gga aaa atg       3987
Ser Pro Trp Ser Glu Cys Ser Gln Thr Cys Gly Leu Thr Gly Lys Met
1224                1229                1234                1239

atc cga aga cga aca gtg acc cag ccc ttt caa ggt gat gga aga cca       4035
Ile Arg Arg Arg Thr Val Thr Gln Pro Phe Gln Gly Asp Gly Arg Pro
1240                1245                1250                1255

tgc cct tcc ctg atg gac cag tcc aaa ccc tgc cca gtg aag cct tgt       4083
Cys Pro Ser Leu Met Asp Gln Ser Lys Pro Cys Pro Val Lys Pro Cys
1256                1261                1266                1271

tat cgg tgg caa tat ggc cag tgg tct cca tgc caa gtg cag gag gcc       4131
Tyr Arg Trp Gln Tyr Gly Gln Trp Ser Pro Cys Gln Val Gln Glu Ala
1272                1277                1282                1287

cag tgt gga gaa ggg acc aga aca agg aac att tct tgt gta gta agt       4179
Gln Cys Gly Glu Gly Thr Arg Thr Arg Asn Ile Ser Cys Val Val Ser
1288                1293                1298                1303

gat ggg tca gct gat gat ttc agc aaa gtg gtg gat gag gaa ttc tgt       4227
Asp Gly Ser Ala Asp Asp Phe Ser Lys Val Val Asp Glu Glu Phe Cys
1304                1309                1314                1319

gct gac att gaa ctc att ata gat ggt aat aaa aat atg gtt ctg gag       4275
Ala Asp Ile Glu Leu Ile Ile Asp Gly Asn Lys Asn Met Val Leu Glu
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1320                1325                1330                1335

gaa tcc tgc agc cag cct tgc cca ggt gac tgt tat ttg aag gac tgg      4323
Glu Ser Cys Ser Gln Pro Cys Pro Gly Asp Cys Tyr Leu Lys Asp Trp
1336                1341                1346                1351

tct tcc tgg agc ctg tgt cag ctg acc tgt gtg aat ggt gag gat cta      4371
Ser Ser Trp Ser Leu Cys Gln Leu Thr Cys Val Asn Gly Glu Asp Leu
1352                1357                1362                1367

ggc ttt ggt gga ata cag gtc aga tcc aga ccg gtg att ata caa gaa      4419
Gly Phe Gly Gly Ile Gln Val Arg Ser Arg Pro Val Ile Ile Gln Glu
1368                1373                1378                1383

cta gag aat cag cat ctg tgc cca gag cag atg tta gaa aca aaa tca      4467
Leu Glu Asn Gln His Leu Cys Pro Glu Gln Met Leu Glu Thr Lys Ser
1384                1389                1394                1399

tgt tat gat gga cag tgc tat gaa tat aaa tgg atg gcc agt gct tgg      4515
Cys Tyr Asp Gly Gln Cys Tyr Glu Tyr Lys Trp Met Ala Ser Ala Trp
1400                1405                1410                1415

aag ggc tct tcc cga aca gtg tgg tgt caa agg tca gat ggt ata aat      4563
Lys Gly Ser Ser Arg Thr Val Trp Cys Gln Arg Ser Asp Gly Ile Asn
1416                1421                1426                1431

gta aca ggg ggc tgc ttg gtg atg agc cag cct gat gcc gac agg tct      4611
Val Thr Gly Gly Cys Leu Val Met Ser Gln Pro Asp Ala Asp Arg Ser
1432                1437                1442                1447

tgt aac cca ccg tgt agt caa ccc cac tcg tac tgt agc gag aca aaa      4659
Cys Asn Pro Pro Cys Ser Gln Pro His Ser Tyr Cys Ser Glu Thr Lys
1448                1453                1458                1463

aca tgc cat tgt gaa gaa ggg tac act gaa gtc atg tct tct aac agc      4707
Thr Cys His Cys Glu Glu Gly Tyr Thr Glu Val Met Ser Ser Asn Ser
1464                1469                1474                1479

acc ctt gag caa tgc aca ctt atc ccc gtg gtg gta tta ccc acc atg      4755
Thr Leu Glu Gln Cys Thr Leu Ile Pro Val Val Val Leu Pro Thr Met
1480                1485                1490                1495

gag gac aaa aga gga gat gtg aaa acc agt cgg gct gta cat cca acc      4803
Glu Asp Lys Arg Gly Asp Val Lys Thr Ser Arg Ala Val His Pro Thr
1496                1501                1506                1511

caa ccc tcc agt aac cca gca gga cgg gga agg acc tgg ttt cta cag      4851
Gln Pro Ser Ser Asn Pro Ala Gly Arg Gly Arg Thr Trp Phe Leu Gln
1512                1517                1522                1527

cca ttt ggg cca gat ggg aga cta aag acc tgg gtt tac ggt gta gca      4899
Pro Phe Gly Pro Asp Gly Arg Leu Lys Thr Trp Val Tyr Gly Val Ala
1528                1533                1538                1543

gct ggg gca ttt gtg tta ctc atc ttt att gtc tcc atg att tat cta      4947
Ala Gly Ala Phe Val Leu Leu Ile Phe Ile Val Ser Met Ile Tyr Leu
1544                1549                1554                1559
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gct tgc aaa aag cca aag aaa ccc caa aga agg caa aac aac cga ctg      4995
Ala Cys Lys Lys Pro Lys Lys Pro Gln Arg Arg Gln Asn Asn Arg Leu
1560                1565                1570                1575

aaa cct tta acc tta gcc tat gat gga gat gcc gac atg taa catataa      5044
Lys Pro Leu Thr Leu Ala Tyr Asp Gly Asp Ala Asp Met  *
1576                1581                1586

cttttcctgg caacaaccag tttcggcttt ctgacttcat agatgtccag aggccacaac   5104

aaatgtatcc aaactgtgtg gattaaaata tattttaatt tttaaaaatg gcatcataaa   5164

gacaagagtg aaaatcatac tgccactgga gatatttaag acagtaccac ttatatacag   5224

accatcaacc gtgagaatta taggagattt agctgaatac atgctgcatt ctgaaagttt   5284

tatgtcatct tttctgaaat ctaccgactg aaaaaccact ttcatctcta aaaaataatg   5344

gtggaattgg ccagttagga tgcctgatac aagaccgtct gcagtgttaa tccataaaac   5404

ttcctagcat gaagagtttc taccaagatc tccacaatac tatggtcaaa ttaacatgtg   5464

tactcagttg aatgacacac attatgtcag attatgtact tgctaataag caattttaac   5524

aatgcataac aaataaactc taagctaagc agaaaatcca ctgaataaat tcagcatctt   5584

ggtggtcgat ggtagatttt attgacctgc atttcagaga caaagcctct tttttaagac   5644

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cctcaagttc agtattttat agtggtaatt gtctggaaaa ctaatttact tgtgttaata   5764

caatacgttt ctactttccc tgattttcaa actggttgcc tgcatctttt ttgctatatg   5824

gaaggcacat ttttgcacta tattagtgca gcacgatagg cgcttaacca gtattgccat   5884

agaaactgcc tcttttcatg tgggatgaag acatctgtgc caagagtggc atgaagacat   5944

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cagctattac acctgctgta cacacacttc ctcatcactg cagccattgt gaaattgaca   6064

acatggcggt aatttaagtg ttgaagtccc taacccctta accctctaaa aggtggattc   6124

ctctagttgg tttgtaattg ttctttgaag gctgtttatg actagatttt tatatttgtt   6184

atctttgtta agaaaaaaaa agaaaaagga actggatgtc tttttaattt tgagcagaag   6244

gaggtcgacg cggccgcggt cgacgcggcc gcgaattcgg atcctcgaga gatctctttt   6304

tttgggtttg gtggggtatc ttcatcatcg aatagatagt tatatacatc atgccaatca   6364

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Met Ala Asp Val Asp Pro Asp Thr Leu Leu Glu Trp Leu Gln Met Gly
1               5                   10

cag gga gat gaa agg gac atg caa cta ata gcc ctt gaa cag cta tgc      96
Gln Gly Asp Glu Arg Asp Met Gln Leu Ile Ala Leu Glu Gln Leu Cys
17                  22                  27                  32

atg ctg ctt ttg atg tct gac aac gtg gat cgt tgt ttt gaa aca tgt     144
Met Leu Leu Leu Met Ser Asp Asn Val Asp Arg Cys Phe Glu Thr Cys
33                  38                  43                  48

cct cct cgc act ttc tta cca gcc ctt tgc aaa att ttt ctt gat gaa     192
Pro Pro Arg Thr Phe Leu Pro Ala Leu Cys Lys Ile Phe Leu Asp Glu
49                  54                  59                  64

agt gct cca gac aat gta tta gag gtg aca gcc cgt gcc ata aca tac     240
Ser Ala Pro Asp Asn Val Leu Glu Val Thr Ala Arg Ala Ile Thr Tyr
65                  70                  75                  80

tac ctg gat gta tct gcg gaa tgt acc cga agg att gtt ggg gta gat     288
Tyr Leu Asp Val Ser Ala Glu Cys Thr Arg Arg Ile Val Gly Val Asp
81                  86                  91                  96

gga gct ata aaa gca ctt tgt aat cgt ttg gtt gta gtt gaa ctt aac     336
Gly Ala Ile Lys Ala Leu Cys Asn Arg Leu Val Val Val Glu Leu Asn
97                  102                 107                 112

aac agg act agc aga gac tta gcc gaa cag tgt gta aag gta tta gaa     384
Asn Arg Thr Ser Arg Asp Leu Ala Glu Gln Cys Val Lys Val Leu Glu
113                 118                 123                 128

ctg ata tgt act cgt gag tca gga gca gtc ttt gag gct ggt ggt ttg     432
Leu Ile Cys Thr Arg Glu Ser Gly Ala Val Phe Glu Ala Gly Gly Leu
129                 134                 139                 144

aat tgt gtg ctt acc ttc att cgt gac agt gga cat cta gtt cat aaa     480
Asn Cys Val Leu Thr Phe Ile Arg Asp Ser Gly His Leu Val His Lys
145                 150                 155                 160

gac acc ttg cac tct gct atg gct gtg gta tca aga ctc tgt ggc aaa     528
Asp Thr Leu His Ser Ala Met Ala Val Val Ser Arg Leu Cys Gly Lys
161                 166                 171                 176

atg gag cct caa gat tct tct tta gaa att tgt gta gaa tct ctg tct     576
Met Glu Pro Gln Asp Ser Ser Leu Glu Ile Cys Val Glu Ser Leu Ser
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177                 182                 187                 192

agt tta tta aag cat gaa gat cat cag gtt tca gat gga gct ctg cga      624
Ser Leu Leu Lys His Glu Asp His Gln Val Ser Asp Gly Ala Leu Arg
193                 198                 203                 208

tgc ttt gca tca ctg gct gac cga ttt acc cgt cgt ggt gtt gac cca      672
Cys Phe Ala Ser Leu Ala Asp Arg Phe Thr Arg Arg Gly Val Asp Pro
209                 214                 219                 224

gct cca tta gcc aag cat gga tta act gag gag ctg tta tct cga atg      720
Ala Pro Leu Ala Lys His Gly Leu Thr Glu Glu Leu Leu Ser Arg Met
225                 230                 235                 240

gct gct gct ggt ggt act gtt tca gga cca tca tca gca tgc aaa cca      768
Ala Ala Ala Gly Gly Thr Val Ser Gly Pro Ser Ser Ala Cys Lys Pro
241                 246                 251                 256

ggt cgc agc acc aca gga gct cca tcc acc act gca gat tcc aaa ttg      816
Gly Arg Ser Thr Thr Gly Ala Pro Ser Thr Thr Ala Asp Ser Lys Leu
257                 262                 267                 272

agt aat cag gtg tca aca att gat ctt ctg agg tcg gag ctt cca gat      864
Ser Asn Gln Val Ser Thr Ile Asp Leu Leu Arg Ser Glu Leu Pro Asp
273                 278                 283                 288

tca att gaa agt gca ttg cag ggt gat gaa aga tgt gtg ctt gat act      912
Ser Ile Glu Ser Ala Leu Gln Gly Asp Glu Arg Cys Val Leu Asp Thr
289                 294                 299                 304

atg cgt ttg gtt gac ctt ctc ttg gtg cta tta ttt gaa gga cga aaa      960
Met Arg Leu Val Asp Leu Leu Leu Val Leu Leu Phe Glu Gly Arg Lys
305                 310                 315                 320

gct ttg cca aag tct agt gct gga tct aca ggc aga atc cca gga ctc     1008
Ala Leu Pro Lys Ser Ser Ala Gly Ser Thr Gly Arg Ile Pro Gly Leu
321                 326                 331                 336

cgg aga tta gat agt tct ggg gag cgc tca cat cgg cag ctt ata gat     1056
Arg Arg Leu Asp Ser Ser Gly Glu Arg Ser His Arg Gln Leu Ile Asp
337                 342                 347                 352

tgt att cga agt aaa gat acc gat gca ctt ata gat gca att gac aca     1104
Cys Ile Arg Ser Lys Asp Thr Asp Ala Leu Ile Asp Ala Ile Asp Thr
353                 358                 363                 368

gga gcc ttt gaa gta aat ttt atg gat gat gta ggt cag act cta tta     1152
Gly Ala Phe Glu Val Asn Phe Met Asp Asp Val Gly Gln Thr Leu Leu
369                 374                 379                 384

aac tgg gcc tct gct ttt gga act cag gaa atg gta gaa ttt ctt tgt     1200
Asn Trp Ala Ser Ala Phe Gly Thr Gln Glu Met Val Glu Phe Leu Cys
385                 390                 395                 400

gag aga ggt gca gat gtt aat aga ggt caa agg tca tca tca tta cat     1248
Glu Arg Gly Ala Asp Val Asn Arg Gly Gln Arg Ser Ser Ser Leu His
401                 406                 411                 416
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tat gct gca tgt ttt gga aga cct caa gta gca aag act ctg tta cgg      1296
Tyr Ala Ala Cys Phe Gly Arg Pro Gln Val Ala Lys Thr Leu Leu Arg
417                 422                 427                 432

cat ggt gca aat cca gat ctg aga gat gaa gat ggg aaa act cca tta      1344
His Gly Ala Asn Pro Asp Leu Arg Asp Glu Asp Gly Lys Thr Pro Leu
433                 438                 443                 448

gat aaa gct cga gaa agg ggc cat agt gaa gtg gta gct att ctt cag      1392
Asp Lys Ala Arg Glu Arg Gly His Ser Glu Val Val Ala Ile Leu Gln
449                 454                 459                 464

tct cca ggt gat tgg atg tgt cca gtt aat aaa gga gat gat aag aaa      1440
Ser Pro Gly Asp Trp Met Cys Pro Val Asn Lys Gly Asp Asp Lys Lys
465                 470                 475                 480

aag aaa gat aca aac aaa gat gaa gaa gaa tgt aat gag ccc aaa gga      1488
Lys Lys Asp Thr Asn Lys Asp Glu Glu Glu Cys Asn Glu Pro Lys Gly
481                 486                 491                 496

gat ccg gaa atg gca ccc ata tac ttg aaa agg tta ttg cca gtg ttt      1536
Asp Pro Glu Met Ala Pro Ile Tyr Leu Lys Arg Leu Leu Pro Val Phe
497                 502                 507                 512

gca caa aca ttt cag caa act atg ctg cct tca ata agg aaa gca agt      1584
Ala Gln Thr Phe Gln Gln Thr Met Leu Pro Ser Ile Arg Lys Ala Ser
513                 518                 523                 528

ctt gct cta att cga aaa atg att cat ttt tgc tct gaa gca ctg tta      1632
Leu Ala Leu Ile Arg Lys Met Ile His Phe Cys Ser Glu Ala Leu Leu
529                 534                 539                 544

aaa gaa gtt tgt gat tct gat gtt ggt cac aat ttg cct aca ata cta      1680
Lys Glu Val Cys Asp Ser Asp Val Gly His Asn Leu Pro Thr Ile Leu
545                 550                 555                 560

gtg gaa atc act gca act gtc ctg gat caa gag gat gat gat gat ggc      1728
Val Glu Ile Thr Ala Thr Val Leu Asp Gln Glu Asp Asp Asp Asp Gly
561                 566                 571                 576

cac ttg ctg gct ttg cag atc ata agg gat tta gta gat aaa ggt ggt      1776
His Leu Leu Ala Leu Gln Ile Ile Arg Asp Leu Val Asp Lys Gly Gly
577                 582                 587                 592

gat ata ttt ttg gat cag cta gcc aga ctt ggt gta att agc aaa gtg      1824
Asp Ile Phe Leu Asp Gln Leu Ala Arg Leu Gly Val Ile Ser Lys Val
593                 598                 603                 608

tca acg ttg gca ggt cct tcc tct gat gat gag aat gaa gag gaa tca      1872
Ser Thr Leu Ala Gly Pro Ser Ser Asp Asp Glu Asn Glu Glu Glu Ser
609                 614                 619                 624

aaa cca gaa aaa gaa gat gaa cca cag gaa gat gct aaa gaa ttg caa      1920
Lys Pro Glu Lys Glu Asp Glu Pro Gln Glu Asp Ala Lys Glu Leu Gln
625                 630                 635                 640
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caa ggt aaa cca tat cat tgg aga gac tgg tca atc att agg gga agg 1968
Gln Gly Lys Pro Tyr His Trp Arg Asp Trp Ser Ile Ile Arg Gly Arg
641 646 651 656

gac tgc tta tat att tgg agt gat gca gca gcc ttg gaa tta tct aat 2016
Asp Cys Leu Tyr Ile Trp Ser Asp Ala Ala Ala Leu Glu Leu Ser Asn
657 662 667 672

ggc agt aat gga tgg ttc aga ttt atc ttg gat gga aaa ctt gcc acc 2064
Gly Ser Asn Gly Trp Phe Arg Phe Ile Leu Asp Gly Lys Leu Ala Thr
673 678 683 688

atg tat tca agt ggt agt ccg gaa ggt gga tct gac agt tca gaa agc 2112
Met Tyr Ser Ser Gly Ser Pro Glu Gly Gly Ser Asp Ser Ser Glu Ser
689 694 699 704

cga agt gaa ttc tta gag aag tta caa aga gct cga ggc caa gta aag 2160
Arg Ser Glu Phe Leu Glu Lys Leu Gln Arg Ala Arg Gly Gln Val Lys
705 710 715 720

cca tct act tca agt caa cct ata ctg tca gca cca gga ccc act aaa 2208
Pro Ser Thr Ser Ser Gln Pro Ile Leu Ser Ala Pro Gly Pro Thr Lys
721 726 731 736

ctt act gta gga aat tgg tca ctg aca tgt ttg aaa gaa gga gaa att 2256
Leu Thr Val Gly Asn Trp Ser Leu Thr Cys Leu Lys Glu Gly Glu Ile
737 742 747 752

gct att cat aat tca gat ggt cag caa gct aca ata ttg aaa gaa gat 2304
Ala Ile His Asn Ser Asp Gly Gln Gln Ala Thr Ile Leu Lys Glu Asp
753 758 763 768

tta cct ggt ttt gta ttt gaa tct aat aga gga acc aaa cat tca ttt 2352
Leu Pro Gly Phe Val Phe Glu Ser Asn Arg Gly Thr Lys His Ser Phe
769 774 779 784

act gca gaa act tcc ctg ggt tca gaa ttt gtg act ggc tgg act ggc 2400
Thr Ala Glu Thr Ser Leu Gly Ser Glu Phe Val Thr Gly Trp Thr Gly
785 790 795 800

aaa aga ggc aga aaa ctg aaa tct aag tta gaa aaa aca aag caa aag 2448
Lys Arg Gly Arg Lys Leu Lys Ser Lys Leu Glu Lys Thr Lys Gln Lys
801 806 811 816

gta cga act atg gct cga gat tta tac gat gac cat ttt aaa gct gtt 2496
Val Arg Thr Met Ala Arg Asp Leu Tyr Asp Asp His Phe Lys Ala Val
817 822 827 832

gaa agc atg cct cgt gga gta gtg gta aca ctc aga aac ata gca act 2544
Glu Ser Met Pro Arg Gly Val Val Val Thr Leu Arg Asn Ile Ala Thr
833 838 843 848

cag tta gag tca tct tgg gaa ctt cat aca aat aga caa tgt att gag 2592
Gln Leu Glu Ser Ser Trp Glu Leu His Thr Asn Arg Gln Cys Ile Glu
849 854 859 864

agt gag aac act tgg aga gat tta atg aag aca gct tta gaa aac cta 2640

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Ser Glu Asn Thr Trp Arg Asp Leu Met Lys Thr Ala Leu Glu Asn Leu
865                 870                 875                 880

att gta ctt ttg aag gat gaa aac aca att tca cca tat gaa atg tgt      2688
Ile Val Leu Leu Lys Asp Glu Asn Thr Ile Ser Pro Tyr Glu Met Cys
881                 886                 891                 896

agc agt ggc ttg gta caa gca ctt ctt act gtg tta aac aat agc atg      2736
Ser Ser Gly Leu Val Gln Ala Leu Leu Thr Val Leu Asn Asn Ser Met
897                 902                 907                 912

gat ttg gat atg aaa caa gat tgt agt caa ctg gta gaa aga ata aat      2784
Asp Leu Asp Met Lys Gln Asp Cys Ser Gln Leu Val Glu Arg Ile Asn
913                 918                 923                 928

gtt ttt aaa act gcc ttt agt gaa aat gaa gat gat gaa agt cga cca      2832
Val Phe Lys Thr Ala Phe Ser Glu Asn Glu Asp Asp Glu Ser Arg Pro
929                 934                 939                 944

gca gtt gcg tta att cga aag tta ata gct gta cta gaa tct att gaa      2880
Ala Val Ala Leu Ile Arg Lys Leu Ile Ala Val Leu Glu Ser Ile Glu
945                 950                 955                 960

cgt cta cct ctc cat ttg tat gat aca cca gga tcc aca tat aac ctc      2928
Arg Leu Pro Leu His Leu Tyr Asp Thr Pro Gly Ser Thr Tyr Asn Leu
961                 966                 971                 976

cag ata ctt aca agg aga tta cga ttt cgg ttg gaa cgt gca cct ggt      2976
Gln Ile Leu Thr Arg Arg Leu Arg Phe Arg Leu Glu Arg Ala Pro Gly
977                 982                 987                 992

gaa act gca ttg att gac agg act ggc aga atg ttg aag atg gaa cct      3024
Glu Thr Ala Leu Ile Asp Arg Thr Gly Arg Met Leu Lys Met Glu Pro
993                 998                 1003                1008

ttg gct aca gtt gaa tct ctg gaa cag tac ctt ttg aaa atg gta gca      3072
Leu Ala Thr Val Glu Ser Leu Glu Gln Tyr Leu Leu Lys Met Val Ala
1009                1014                1019                1024

aaa cag tgg tat gat ttt gac cga tct tca ttt gtt ttt gtt cga aaa      3120
Lys Gln Trp Tyr Asp Phe Asp Arg Ser Ser Phe Val Phe Val Arg Lys
1025                1030                1035                1040

tta aga gaa gga caa aat ttt ata ttt cgg cac cag cat gat ttt gat      3168
Leu Arg Glu Gly Gln Asn Phe Ile Phe Arg His Gln His Asp Phe Asp
1041                1046                1051                1056

gaa aat gga atc att tac tgg att gga aca aat gca aaa act gct tat      3216
Glu Asn Gly Ile Ile Tyr Trp Ile Gly Thr Asn Ala Lys Thr Ala Tyr
1057                1062                1067                1072

gaa tgg gta aat cca gct gcc tat gga ctt gta gta gta acg tca tca      3264
Glu Trp Val Asn Pro Ala Ala Tyr Gly Leu Val Val Val Thr Ser Ser
1073                1078                1083                1088

gaa gga aga aat cta cct tat ggc cgc tta gaa gac ata cta agt cgt      3312
Glu Gly Arg Asn Leu Pro Tyr Gly Arg Leu Glu Asp Ile Leu Ser Arg
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1089                1094                1099                1104

gat aat tca gct tta aat tgt cat agc aat gat gat aag aat gcc tgg      3360
Asp Asn Ser Ala Leu Asn Cys His Ser Asn Asp Asp Lys Asn Ala Trp
1105                1110                1115                1120

ttt gcc ata gat ctg ggt ctc tgg gtg ata cca tca gca tat aca ctt      3408
Phe Ala Ile Asp Leu Gly Leu Trp Val Ile Pro Ser Ala Tyr Thr Leu
1121                1126                1131                1136

cgt cat gct cgt ggt tat gga agg tct gca ctg aga aat tgg gtt ttc      3456
Arg His Ala Arg Gly Tyr Gly Arg Ser Ala Leu Arg Asn Trp Val Phe
1137                1142                1147                1152

cag gta tcc aaa gat gga cag aac tgg act tct ttg tat acc cat gtt      3504
Gln Val Ser Lys Asp Gly Gln Asn Trp Thr Ser Leu Tyr Thr His Val
1153                1158                1163                1168

gat gac tgc agt ctc aat gaa cca ggg tca act gca act tgg cct ctt      3552
Asp Asp Cys Ser Leu Asn Glu Pro Gly Ser Thr Ala Thr Trp Pro Leu
1169                1174                1179                1184

gat cca cca aag gat gag aaa caa ggg tgg aga cat gtg aga att aaa      3600
Asp Pro Pro Lys Asp Glu Lys Gln Gly Trp Arg His Val Arg Ile Lys
1185                1190                1195                1200

cag atg ggg aaa aat gcc agt gga caa aca cac tac ctc tca tta tct      3648
Gln Met Gly Lys Asn Ala Ser Gly Gln Thr His Tyr Leu Ser Leu Ser
1201                1206                1211                1216

gga ttc gaa ctt tat ggc act gta aat gga gta tgt gaa gat cag cta      3696
Gly Phe Glu Leu Tyr Gly Thr Val Asn Gly Val Cys Glu Asp Gln Leu
1217                1222                1227                1232

ggg aaa gca gct aaa gaa gca gaa gct aat ctt aga cgg cag aga cgt      3744
Gly Lys Ala Ala Lys Glu Ala Glu Ala Asn Leu Arg Arg Gln Arg Arg
1233                1238                1243                1248

cta gta cgt tcc cag gtt ctg aaa tac atg gtt cca gga gct cgt gtt      3792
Leu Val Arg Ser Gln Val Leu Lys Tyr Met Val Pro Gly Ala Arg Val
1249                1254                1259                1264

atc aga ggc ctg gat tgg aaa tgg cga gat cag gat ggc agc cca cag      3840
Ile Arg Gly Leu Asp Trp Lys Trp Arg Asp Gln Asp Gly Ser Pro Gln
1265                1270                1275                1280

gga gaa ggc act gtc aca gga gaa cta cac aat ggc tgg att gat gtc      3888
Gly Glu Gly Thr Val Thr Gly Glu Leu His Asn Gly Trp Ile Asp Val
1281                1286                1291                1296

acc tgg gat gct ggt ggc tca aac tct tac cgt atg ggc gca gaa gga      3936
Thr Trp Asp Ala Gly Gly Ser Asn Ser Tyr Arg Met Gly Ala Glu Gly
1297                1302                1307                1312

aaa ttt gac ctc aag ctt gca cca ggg tac gac cct gat aca gtg gca      3984
Lys Phe Asp Leu Lys Leu Ala Pro Gly Tyr Asp Pro Asp Thr Val Ala
1313                1318                1323                1328
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 tca ccc aaa cct gtt tca tcc act gtt tca ggc aca acg caa tca tgg      4032
 Ser Pro Lys Pro Val Ser Ser Thr Val Ser Gly Thr Thr Gln Ser Trp
1329                1334                1339                1344

 agc agc ttg gtg aaa aac aac tgt cca gac aag aca tct gct gct gca      4080
 Ser Ser Leu Val Lys Asn Asn Cys Pro Asp Lys Thr Ser Ala Ala Ala
1345                1350                1355                1360

 ggc tcc tca agt aga aaa gga agc agc agt tct gtg tgt agc gtg gcc      4128
 Gly Ser Ser Ser Arg Lys Gly Ser Ser Ser Ser Val Cys Ser Val Ala
1361                1366                1371                1376

 agt agc agc gac atc agc ttg ggt tcg acc aaa acg gaa cgg aga tca      4176
 Ser Ser Ser Asp Ile Ser Leu Gly Ser Thr Lys Thr Glu Arg Arg Ser
1377                1382                1387                1392

 gaa att gta atg gaa cac agt ata gtt tca gga gct gat gtc cat gaa      4224
 Glu Ile Val Met Glu His Ser Ile Val Ser Gly Ala Asp Val His Glu
1393                1398                1403                1408

 cca att gtt gtt ctt tca tct gct gaa aac gtc cct caa aca gaa gta      4272
 Pro Ile Val Val Leu Ser Ser Ala Glu Asn Val Pro Gln Thr Glu Val
1409                1414                1419                1424

 ggg tca tct tcc agt gca agc acc agc acc tta aca gcg gaa acg gga      4320
 Gly Ser Ser Ser Ser Ala Ser Thr Ser Thr Leu Thr Ala Glu Thr Gly
1425                1430                1435                1440

 agt gaa aat gct gaa agg aag tta ggc cct gat agt tct gtt cgt act      4368
 Ser Glu Asn Ala Glu Arg Lys Leu Gly Pro Asp Ser Ser Val Arg Thr
1441                1446                1451                1456

 cct ggg gag tct agt gca ata tcc atg gga att gtc agt gtt agt tct      4416
 Pro Gly Glu Ser Ser Ala Ile Ser Met Gly Ile Val Ser Val Ser Ser
1457                1462                1467                1472

 cct gat gtt agt tca gta tct gaa tta act aat aaa gaa gca gct tca      4464
 Pro Asp Val Ser Ser Val Ser Glu Leu Thr Asn Lys Glu Ala Ala Ser
1473                1478                1483                1488

 caa cga cct ctt agc tct tca gca agt aac aga ctg tca gtg agt tct      4512
 Gln Arg Pro Leu Ser Ser Ser Ala Ser Asn Arg Leu Ser Val Ser Ser
1489                1494                1499                1504

 ttg ttg gct gct ggg gcc cct atg agc tct agt gca agt gta cct aac      4560
 Leu Leu Ala Ala Gly Ala Pro Met Ser Ser Ser Ala Ser Val Pro Asn
1505                1510                1515                1520

 ctg tcc tca aga gaa aca tct agc ttg gag agt ttt gta agg aga gtg      4608
 Leu Ser Ser Arg Glu Thr Ser Ser Leu Glu Ser Phe Val Arg Arg Val
1521                1526                1531                1536

 gca aac ata gca cgg act aat gcc acg aac aac atg aat cta agc cga      4656
 Ala Asn Ile Ala Arg Thr Asn Ala Thr Asn Asn Met Asn Leu Ser Arg
1537                1542                1547                1552
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agc agc agt gat aac aac act aat act ttg ggg agg aat gtg atg agc      4704
Ser Ser Ser Asp Asn Asn Thr Asn Thr Leu Gly Arg Asn Val Met Ser
1553                1558                1563                1568

aca gca act tct cct ctt atg ggt gct cag agt ttc cct aat ttg acc      4752
Thr Ala Thr Ser Pro Leu Met Gly Ala Gln Ser Phe Pro Asn Leu Thr
1569                1574                1579                1584

aca cct ggt act aca tca aca gtg act atg tca aca tcc agt gtt act      4800
Thr Pro Gly Thr Thr Ser Thr Val Thr Met Ser Thr Ser Ser Val Thr
1585                1590                1595                1600

agc agc agc aat gta gct aca gca aca aca gtt tta tca gtt ggt caa      4848
Ser Ser Ser Asn Val Ala Thr Ala Thr Thr Val Leu Ser Val Gly Gln
1601                1606                1611                1616

tct tta agt aac act tta acc acc agc ctc aca tca act tcc agt gag      4896
Ser Leu Ser Asn Thr Leu Thr Thr Ser Leu Thr Ser Thr Ser Ser Glu
1617                1622                1627                1632

agt gac aca ggt cag gaa gca gaa tat tcc tta tat gat ttc ctt gat      4944
Ser Asp Thr Gly Gln Glu Ala Glu Tyr Ser Leu Tyr Asp Phe Leu Asp
1633                1638                1643                1648

agc tgc cgt gcc agt act cta ttg gct gag ctc gat gat gat gag gac      4992
Ser Cys Arg Ala Ser Thr Leu Leu Ala Glu Leu Asp Asp Asp Glu Asp
1649                1654                1659                1664

tta cct gag cca gat gaa gaa gat gat gag aat gaa gat gac aat cag      5040
Leu Pro Glu Pro Asp Glu Glu Asp Asp Glu Asn Glu Asp Asp Asn Gln
1665                1670                1675                1680

gag gac caa gaa tac gag gag gtt atg att ctg aga cgc cca tcc ctg      5088
Glu Asp Gln Glu Tyr Glu Glu Val Met Ile Leu Arg Arg Pro Ser Leu
1681                1686                1691                1696

caa cgt cga gct ggc tcc cgc tct gat gta acg cat cat gct gtt acc      5136
Gln Arg Arg Ala Gly Ser Arg Ser Asp Val Thr His His Ala Val Thr
1697                1702                1707                1712

tcg cag cta cca cag gta cct gct gga gca ggg agc cga cct att ggg      5184
Ser Gln Leu Pro Gln Val Pro Ala Gly Ala Gly Ser Arg Pro Ile Gly
1713                1718                1723                1728

gag cag gaa gaa gaa gag tac gaa act aaa gga gga cgc cgg aga aca      5232
Glu Gln Glu Glu Glu Glu Tyr Glu Thr Lys Gly Gly Arg Arg Arg Thr
1729                1734                1739                1744

tgg gat gat gat tat gtg cta aag aga cag ttt tct gca ttg gtt cct      5280
Trp Asp Asp Asp Tyr Val Leu Lys Arg Gln Phe Ser Ala Leu Val Pro
1745                1750                1755                1760

gct ttt gat cct aga cct ggt cgt act aat gtc cag cag aca act gat      5328
Ala Phe Asp Pro Arg Pro Gly Arg Thr Asn Val Gln Gln Thr Thr Asp
1761                1766                1771                1776

cta gaa ata cca ccc cca ggg acc cct cat tca gag ctc ttg gaa gaa      5376
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Leu Glu Ile Pro Pro Pro Gly Thr Pro His Ser Glu Leu Leu Glu Glu
1777                1782                1787                1792

gtc gaa tgt act ccg tca cct cga tta gct ctc act ttg aaa gta aca      5424
Val Glu Cys Thr Pro Ser Pro Arg Leu Ala Leu Thr Leu Lys Val Thr
1793                1798                1803                1808

ggt ctt gga acg act cgt gaa gtt gaa tta cca ctc acc aat ttc aga      5472
Gly Leu Gly Thr Thr Arg Glu Val Glu Leu Pro Leu Thr Asn Phe Arg
1809                1814                1819                1824

tca acc atc ttt tac tat gta caa aaa ttg ctt caa ttg tcc tgt aat      5520
Ser Thr Ile Phe Tyr Tyr Val Gln Lys Leu Leu Gln Leu Ser Cys Asn
1825                1830                1835                1840

ggc aat gtg aaa tca gat aaa ctt agg cgt att tgg gag ccc aca tac      5568
Gly Asn Val Lys Ser Asp Lys Leu Arg Arg Ile Trp Glu Pro Thr Tyr
1841                1846                1851                1856

aca atc atg tac aga gaa atg aag gat tct gat aaa gaa aag gaa aat      5616
Thr Ile Met Tyr Arg Glu Met Lys Asp Ser Asp Lys Glu Lys Glu Asn
1857                1862                1867                1872

gga aaa atg ggt tgc tgg tct ata gag cat gtg gag cag tac ctt ggc      5664
Gly Lys Met Gly Cys Trp Ser Ile Glu His Val Glu Gln Tyr Leu Gly
1873                1878                1883                1888

act gat gaa tta cca aag aat gac ttg ata acc tac ctg cag aag aat      5712
Thr Asp Glu Leu Pro Lys Asn Asp Leu Ile Thr Tyr Leu Gln Lys Asn
1889                1894                1899                1904

gca gac gct gct ttc ctg cgc cac tgg aaa tta act ggc act aat aaa      5760
Ala Asp Ala Ala Phe Leu Arg His Trp Lys Leu Thr Gly Thr Asn Lys
1905                1910                1915                1920

agt att agg aaa aac aga aat tgt tct cag ctc ata gct gca tat aag      5808
Ser Ile Arg Lys Asn Arg Asn Cys Ser Gln Leu Ile Ala Ala Tyr Lys
1921                1926                1931                1936

gat ttt tgt gag cat gga aca aag tct ggg tta aac cag ggg gcc att      5856
Asp Phe Cys Glu His Gly Thr Lys Ser Gly Leu Asn Gln Gly Ala Ile
1937                1942                1947                1952

tct act ctt caa agt agt gat att ctt aat tta aca aaa gaa caa cct      5904
Ser Thr Leu Gln Ser Ser Asp Ile Leu Asn Leu Thr Lys Glu Gln Pro
1953                1958                1963                1968

cag gcc aaa gca ggc aat gga cag aac tct tgt gga gta gaa gat gtc      5952
Gln Ala Lys Ala Gly Asn Gly Gln Asn Ser Cys Gly Val Glu Asp Val
1969                1974                1979                1984

ctt cag ctt ctg cgt att ctg tat ata gtt gca agt gac cct tat tca      6000
Leu Gln Leu Leu Arg Ile Leu Tyr Ile Val Ala Ser Asp Pro Tyr Ser
1985                1990                1995                2000

aga ata tcc cag gaa gat ggt gat gaa cag cct cag ttt act ttt cca      6048
Arg Ile Ser Gln Glu Asp Gly Asp Glu Gln Pro Gln Phe Thr Phe Pro
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Pro Asp Glu Phe Thr Ser Lys Lys Ile Thr Thr Lys Ile Leu Gln Gln
2017                2022                 2027                 2032

att gag gaa cca ttg gca ctg gca agt ggg gct ctg cca gac tgg tgt      6144
Ile Glu Glu Pro Leu Ala Leu Ala Ser Gly Ala Leu Pro Asp Trp Cys
2033                2038                 2043                 2048

gaa caa tta acc agc aaa tgt cct ttt cta ata cca ttt gaa act aga      6192
Glu Gln Leu Thr Ser Lys Cys Pro Phe Leu Ile Pro Phe Glu Thr Arg
2049                2054                 2059                 2064

cag ctt tat ttc aca tgt aca gca ttt ggc gcc tca aga gca ata gta      6240
Gln Leu Tyr Phe Thr Cys Thr Ala Phe Gly Ala Ser Arg Ala Ile Val
2065                2070                 2075                 2080

tgg tta cag aac cga cgt gaa gcc act gtg gag cga acg aga acc aca      6288
Trp Leu Gln Asn Arg Arg Glu Ala Thr Val Glu Arg Thr Arg Thr Thr
2081                2086                 2091                 2096

agc agt gtt agg cga gat gac cct gga gag ttt cga gtt ggt cgt ctc      6336
Ser Ser Val Arg Arg Asp Asp Pro Gly Glu Phe Arg Val Gly Arg Leu
2097                2102                 2107                 2112

aag cat gaa aga gta aaa gtt cca cgt ggc gag tca ctg atg gaa tgg      6384
Lys His Glu Arg Val Lys Val Pro Arg Gly Glu Ser Leu Met Glu Trp
2113                2118                 2123                 2128

gct gag aat gtc atg caa ata cat gca gat cgg aaa tca gtt ctt gag      6432
Ala Glu Asn Val Met Gln Ile His Ala Asp Arg Lys Ser Val Leu Glu
2129                2134                 2139                 2144

gtt gaa ttt tta gga gaa gaa gga act ggc ttg gga ccc aca tta gag      6480
Val Glu Phe Leu Gly Glu Glu Gly Thr Gly Leu Gly Pro Thr Leu Glu
2145                2150                 2155                 2160

ttt tat gct ctg gtg gca gca gaa ttc cag aga act gac ttg gga gct      6528
Phe Tyr Ala Leu Val Ala Ala Glu Phe Gln Arg Thr Asp Leu Gly Ala
2161                2166                 2171                 2176

tgg ctt tgt gat gat aat ttt cca gat gat gaa tct cgt cac gtt gat      6576
Trp Leu Cys Asp Asp Asn Phe Pro Asp Asp Glu Ser Arg His Val Asp
2177                2182                 2187                 2192

ctt gga ggt gga ttg aaa cct cct gga tat tat gtg cag agg tca tgt      6624
Leu Gly Gly Gly Leu Lys Pro Pro Gly Tyr Tyr Val Gln Arg Ser Cys
2193                2198                 2203                 2208

gga ctg ttc aca gca cca ttt cca cag gat agt gat gag ctt gaa agg      6672
Gly Leu Phe Thr Ala Pro Phe Pro Gln Asp Ser Asp Glu Leu Glu Arg
2209                2214                 2219                 2224

atc acg aaa ctg ttt cat ttc ctt gga att ttc ttg gcc aaa tgc att      6720
Ile Thr Lys Leu Phe His Phe Leu Gly Ile Phe Leu Ala Lys Cys Ile
2225                2230                 2235                 2240
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caa gac aat aga ctt gtg gac tta cct att tct aaa cct ttt ttt aaa      6768
Gln Asp Asn Arg Leu Val Asp Leu Pro Ile Ser Lys Pro Phe Phe Lys
2241                2246                2251                2256

ctt atg tgt atg ggt gac att aaa agc aat atg agt aaa ctg att tat      6816
Leu Met Cys Met Gly Asp Ile Lys Ser Asn Met Ser Lys Leu Ile Tyr
2257                2262                2267                2272

gag tca cga ggt gat aga gac tta cac tgt act gaa agt cag tct gaa      6864
Glu Ser Arg Gly Asp Arg Asp Leu His Cys Thr Glu Ser Gln Ser Glu
2273                2278                2283                2288

gct tct aca gaa gaa ggt cat gat tca ctc tcg gta gga agc ttt gaa      6912
Ala Ser Thr Glu Glu Gly His Asp Ser Leu Ser Val Gly Ser Phe Glu
2289                2294                2299                2304

gag gat tca aaa tca gaa ttt att ctt gat ccc cct aaa cca aaa ccc      6960
Glu Asp Ser Lys Ser Glu Phe Ile Leu Asp Pro Pro Lys Pro Lys Pro
2305                2310                2315                2320

cca gct tgg ttt aat gga att ttg act tgg gaa gac ttt gaa tta gta      7008
Pro Ala Trp Phe Asn Gly Ile Leu Thr Trp Glu Asp Phe Glu Leu Val
2321                2326                2331                2336

aac cca cac aga gcc aga ttt tta aaa gaa att aaa gac ctt gct atc      7056
Asn Pro His Arg Ala Arg Phe Leu Lys Glu Ile Lys Asp Leu Ala Ile
2337                2342                2347                2352

aag agg cgc caa att tta agc aac aaa ggt ctt tct gaa gat gag aag      7104
Lys Arg Arg Gln Ile Leu Ser Asn Lys Gly Leu Ser Glu Asp Glu Lys
2353                2358                2363                2368

aac aca aaa tta cag gaa cta gtg ctg aag aat cca tca ggt tct ggg      7152
Asn Thr Lys Leu Gln Glu Leu Val Leu Lys Asn Pro Ser Gly Ser Gly
2369                2374                2379                2384

cct cca ctt agc ata gag gat tta ggt tta aat ttc cag ttt tgc cct      7200
Pro Pro Leu Ser Ile Glu Asp Leu Gly Leu Asn Phe Gln Phe Cys Pro
2385                2390                2395                2400

tcc tca aga ata tat ggt ttt aca gct gtg gat ctc aag cca agt ggt      7248
Ser Ser Arg Ile Tyr Gly Phe Thr Ala Val Asp Leu Lys Pro Ser Gly
2401                2406                2411                2416

gaa gat gag atg ata aca atg gat aat gca gaa gaa tat gtg gat ttg      7296
Glu Asp Glu Met Ile Thr Met Asp Asn Ala Glu Glu Tyr Val Asp Leu
2417                2422                2427                2432

atg ttt gac ttt tgt atg cat acg ggt att cag aaa caa atg gaa gcc      7344
Met Phe Asp Phe Cys Met His Thr Gly Ile Gln Lys Gln Met Glu Ala
2433                2438                2443                2448

ttt aga gat ggg ttt aat aaa gtt ttt cca atg gag aaa tta agt tcc      7392
Phe Arg Asp Gly Phe Asn Lys Val Phe Pro Met Glu Lys Leu Ser Ser
2449                2454                2459                2464
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Phe Ser His Glu Glu Val Gln Met Ile Leu Cys Gly Asn Gln Ser Pro
2465                2470                2475                2480

tcc tgg gca gca gag gat att atc aat tac act gaa cct aag ctg ggt      7488
Ser Trp Ala Ala Glu Asp Ile Ile Asn Tyr Thr Glu Pro Lys Leu Gly
2481                2486                2491                2496

tat aca cgt gac agc cct ggt ttc ctg agg ttt gtg agg gtt tta tgt      7536
Tyr Thr Arg Asp Ser Pro Gly Phe Leu Arg Phe Val Arg Val Leu Cys
2497                2502                2507                2512

ggc atg tct tct gat gaa agg aaa gca ttc ttg cag ttt acc act ggt      7584
Gly Met Ser Ser Asp Glu Arg Lys Ala Phe Leu Gln Phe Thr Thr Gly
2513                2518                2523                2528

tgt tca act cta ccc cca ggt gga ctg gct aac ctg cat ccc agg ctc      7632
Cys Ser Thr Leu Pro Pro Gly Gly Leu Ala Asn Leu His Pro Arg Leu
2529                2534                2539                2544

acg gtt gta cgc aag gtt gat gct act gat gca agc tat cca tca gtc      7680
Thr Val Val Arg Lys Val Asp Ala Thr Asp Ala Ser Tyr Pro Ser Val
2545                2550                2555                2560

aat aca tgt gtg cat tac ctt aag ttg cct gaa tat tct tcc gag gag      7728
Asn Thr Cys Val His Tyr Leu Lys Leu Pro Glu Tyr Ser Ser Glu Glu
2561                2566                2571                2576

atc atg aga gag cgc ctg cta gct gct aca atg gag aaa ggc ttt cat      7776
Ile Met Arg Glu Arg Leu Leu Ala Ala Thr Met Glu Lys Gly Phe His
2577                2582                2587                2592

ctc aat tga gctttga agtgcaatgg gagacatcag agactttaaa aatactagtg      7832
Leu Asn  *
2593

aagcctcttg tgtttgtgtg cagagaagta tatgatccac catgctaatg acacttgcct   7892

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gcc acc gaa tgt gag ttt gta ggg agc tta cct gtg att gtg gtg ggc      940
Ala Thr Glu Cys Glu Phe Val Gly Ser Leu Pro Val Ile Val Val Gly
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Arg Leu Lys Val Ala Leu Glu Pro Gln Leu Trp Glu Leu Gly Lys Val
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Pro Gly Arg Ser Arg Met Ile Ser Gln Glu Glu Phe Ala Arg Gln Leu
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Gln Leu Ser Asp Pro Gln Thr Val Ala Gly Ala Phe Gly Tyr Phe Gln
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Gln Asp Thr Lys Gly Leu Val Asp Phe Arg Asp Val Ala Leu Ala Leu
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gca gct ctg gat ggg ggc agg agc ctg gaa gag cta act cgt ctg gcc      1228
Ala Ala Leu Asp Gly Gly Arg Ser Leu Glu Glu Leu Thr Arg Leu Ala
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121                126                 131                 136

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Ser Arg Tyr  *
153

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                            Met Glu Lys Ser Arg Met Asn Leu Pro
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aag ggg ccg gac acg ctc tgc ttc gac aag gac gag ttc atg aag gaa      160
Lys Gly Pro Asp Thr Leu Cys Phe Asp Lys Asp Glu Phe Met Lys Glu
 10                  15                  20                  25

gat ttc gat gtc gat cat ttt gtg tct gac tgt agg aag cgg gtc cag      208
Asp Phe Asp Val Asp His Phe Val Ser Asp Cys Arg Lys Arg Val Gln
 26                  31                  36                  41

ctg gaa gaa ctg aga gat gac ctg gag ctc tac tat aaa ctt ctt aaa      256
Leu Glu Glu Leu Arg Asp Asp Leu Glu Leu Tyr Tyr Lys Leu Leu Lys
 42                  47                  52                  57

aca gcc atg gtc gaa ctc atc aac aag gat tat gca gat ttt gtc aat      304
Thr Ala Met Val Glu Leu Ile Asn Lys Asp Tyr Ala Asp Phe Val Asn
 58                  63                  68                  73

ctt tca aca aac ttg gtt ggc atg gac aaa gcc ctc aac cag ctt tct      352
Leu Ser Thr Asn Leu Val Gly Met Asp Lys Ala Leu Asn Gln Leu Ser
 74                  79                  84                  89

gtg cct ttg gga caa tta cga gaa gag gtt ctg agc ctt aga tcg tct      400
Val Pro Leu Gly Gln Leu Arg Glu Glu Val Leu Ser Leu Arg Ser Ser
 90                  95                 100                 105

gtc agt gaa gga att cgg gca gtt gat gaa cga atg tct aaa caa gag      448
Val Ser Glu Gly Ile Arg Ala Val Asp Glu Arg Met Ser Lys Gln Glu
106                 111                 116                 121

gac att agg aaa aaa aag atg tgt gta ttg agg ctt ata caa gtt att      496
Asp Ile Arg Lys Lys Lys Met Cys Val Leu Arg Leu Ile Gln Val Ile
122                 127                 132                 137

cgg tca gtt gag aaa att gaa aaa atc tta aac tct caa agt tct aaa      544
Arg Ser Val Glu Lys Ile Glu Lys Ile Leu Asn Ser Gln Ser Ser Lys
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138                 143                 148                 153

gaa acc tct gca cta gaa gca agc agc ccc ctt ttg act gga caa att         592
Glu Thr Ser Ala Leu Glu Ala Ser Ser Pro Leu Leu Thr Gly Gln Ile
154                 159                 164                 169

ttg gag aga att gcc aca gaa ttt aat cag tta cag ttt cat gct gtt         640
Leu Glu Arg Ile Ala Thr Glu Phe Asn Gln Leu Gln Phe His Ala Val
170                 175                 180                 185

caa agc aaa ggc atg cct ctt ttg gac aaa gta aga ccg cgt ata gct         688
Gln Ser Lys Gly Met Pro Leu Leu Asp Lys Val Arg Pro Arg Ile Ala
186                 191                 196                 201

ggc att aca gcc atg tta cag cag tca ctg gaa ggt ctc cta tta gaa         736
Gly Ile Thr Ala Met Leu Gln Gln Ser Leu Glu Gly Leu Leu Leu Glu
202                 207                 212                 217

ggc ctt cag acg tct gac gtc gat ata ata cgg cac tgc ttg cgg act         784
Gly Leu Gln Thr Ser Asp Val Asp Ile Ile Arg His Cys Leu Arg Thr
218                 223                 228                 233

tac gcc acg att gac aag aca cgg gac gcg gag gcc tta gtt ggc caa         832
Tyr Ala Thr Ile Asp Lys Thr Arg Asp Ala Glu Ala Leu Val Gly Gln
234                 239                 244                 249

gta cta gtg aaa cca tac ata gac gag gtg att ata gag cag ttt gtt         880
Val Leu Val Lys Pro Tyr Ile Asp Glu Val Ile Ile Glu Gln Phe Val
250                 255                 260                 265

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Glu Ser His Pro Asn Gly Leu Gln Val Met Tyr Asn Lys Leu Leu Glu
266                 271                 276                 281

ttt gtt cct cac cat tgc cgc ctt ctt cga gaa gtc aca gga ggt gcc         976
Phe Val Pro His His Cys Arg Leu Leu Arg Glu Val Thr Gly Gly Ala
282                 287                 292                 297

atc tcc agt gaa aaa ggc aat act gtt cct gga tat gac ttt ttg gtg        1024
Ile Ser Ser Glu Lys Gly Asn Thr Val Pro Gly Tyr Asp Phe Leu Val
298                 303                 308                 313

aat tct gtt tgg cca caa ata gta caa gga tta gaa gaa aag tta ccc        1072
Asn Ser Val Trp Pro Gln Ile Val Gln Gly Leu Glu Glu Lys Leu Pro
314                 319                 324                 329

tcg ctt ttt aat cct ggg aat ccc gat gca ttt cat gag aaa tat acc        1120
Ser Leu Phe Asn Pro Gly Asn Pro Asp Ala Phe His Glu Lys Tyr Thr
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ata agt atg gat ttt gtc aga aga ttg gaa cgg cag tgt gga tca cag        1168
Ile Ser Met Asp Phe Val Arg Arg Leu Glu Arg Gln Cys Gly Ser Gln
346                 351                 356                 361

gct agt gta aag aga tta aga gcc cat cct gcc tat cac agc ttc aat        1216
Ala Ser Val Lys Arg Leu Arg Ala His Pro Ala Tyr His Ser Phe Asn
362                 367                 372                 377
```

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aag aag tgg aac ttg cct gtt tat ttt caa ata aga ttt aga gaa ata      1264
Lys Lys Trp Asn Leu Pro Val Tyr Phe Gln Ile Arg Phe Arg Glu Ile
378                 383                 388                 393

gcg gga tcc tta gaa gca gca ctt aca gat gtc ctg gaa gat gcc cca      1312
Ala Gly Ser Leu Glu Ala Ala Leu Thr Asp Val Leu Glu Asp Ala Pro
394                 399                 404                 409

gct gaa agt ccg tat tgc ctt ttg gct tct cat aga act tgg agc agc      1360
Ala Glu Ser Pro Tyr Cys Leu Leu Ala Ser His Arg Thr Trp Ser Ser
410                 415                 420                 425

ctt agg agg tgt tgg tca gat gag atg ttc ttg cca tta ctg gtg cat      1408
Leu Arg Arg Cys Trp Ser Asp Glu Met Phe Leu Pro Leu Leu Val His
426                 431                 436                 441

cgc ctg tgg aga ctc act ctg cag att ttg gca cga tac tct gtg ttt      1456
Arg Leu Trp Arg Leu Thr Leu Gln Ile Leu Ala Arg Tyr Ser Val Phe
442                 447                 452                 457

gtc aat gag ctt tca ctc agg ccc att tct aat gaa agt ccc aag gag      1504
Val Asn Glu Leu Ser Leu Arg Pro Ile Ser Asn Glu Ser Pro Lys Glu
458                 463                 468                 473

atc aag aaa cct ttg gta act ggt agc aaa gaa cct tcc atc acc caa      1552
Ile Lys Lys Pro Leu Val Thr Gly Ser Lys Glu Pro Ser Ile Thr Gln
474                 479                 484                 489

gga aac act gaa gac caa gga agt ggt cct tcg gaa aca aag cct gtg      1600
Gly Asn Thr Glu Asp Gln Gly Ser Gly Pro Ser Glu Thr Lys Pro Val
490                 495                 500                 505

gtt tcc att tcc cgc act cag ctc gtg tat gtg gtt gca gac ctg gac      1648
Val Ser Ile Ser Arg Thr Gln Leu Val Tyr Val Val Ala Asp Leu Asp
506                 511                 516                 521

aag ctt cag gag cag ctt cca gaa ctc ttg gaa ata atc aag cca aaa      1696
Lys Leu Gln Glu Gln Leu Pro Glu Leu Leu Glu Ile Ile Lys Pro Lys
522                 527                 532                 537

ctt gaa atg att ggc ttt aag aat ttt tct tct atc tca gca gcc ctg      1744
Leu Glu Met Ile Gly Phe Lys Asn Phe Ser Ser Ile Ser Ala Ala Leu
538                 543                 548                 553

gag gac tcc cag agc tct ttt tca gcc tgt gtg ccc tcc ttg agt agc      1792
Glu Asp Ser Gln Ser Ser Phe Ser Ala Cys Val Pro Ser Leu Ser Ser
554                 559                 564                 569

aag atc atc cag gat tta agt gac tct tgc ttc ggt ttc cta aaa agc      1840
Lys Ile Ile Gln Asp Leu Ser Asp Ser Cys Phe Gly Phe Leu Lys Ser
570                 575                 580                 585

gcc ctg gag gtt ccc agg ctt tac cga aga acc aat aag gag gtc cca      1888
Ala Leu Glu Val Pro Arg Leu Tyr Arg Arg Thr Asn Lys Glu Val Pro
586                 591                 596                 601
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acc aca gct tcc tcc tat gtg gac agt gct ctg aag ccc tta ttc cag      1936
Thr Thr Ala Ser Ser Tyr Val Asp Ser Ala Leu Lys Pro Leu Phe Gln
602                 607                 612                 617

ctt cag agc gga cac aag gat aag ctc aaa caa gca ata att cag cag      1984
Leu Gln Ser Gly His Lys Asp Lys Leu Lys Gln Ala Ile Ile Gln Gln
618                 623                 628                 633

tgg cta gaa ggc act ctc agt gaa agc act cat aag tac tat gaa acc      2032
Trp Leu Glu Gly Thr Leu Ser Glu Ser Thr His Lys Tyr Tyr Glu Thr
634                 639                 644                 649

gtg tca gat gta tta aac tct gtg aag aag atg gaa gag agc ctg aaa      2080
Val Ser Asp Val Leu Asn Ser Val Lys Lys Met Glu Glu Ser Leu Lys
650                 655                 660                 665

agg ctg aaa caa gcc aga aaa acc act ccc gcc aac ccc gtc ggt ccc      2128
Arg Leu Lys Gln Ala Arg Lys Thr Thr Pro Ala Asn Pro Val Gly Pro
666                 671                 676                 681

agt ggt ggc atg agc gac gac gac aaa atc agg ctg cag ttg gcc cta      2176
Ser Gly Gly Met Ser Asp Asp Asp Lys Ile Arg Leu Gln Leu Ala Leu
682                 687                 692                 697

gat gtt gag tac ttg gga gag cag ata caa aag ttg gga cta caa gca      2224
Asp Val Glu Tyr Leu Gly Glu Gln Ile Gln Lys Leu Gly Leu Gln Ala
698                 703                 708                 713

agt gac ata aaa agc ttc tca gct ctc gca gag ctt gtt gct gct gcc      2272
Ser Asp Ile Lys Ser Phe Ser Ala Leu Ala Glu Leu Val Ala Ala Ala
714                 719                 724                 729

aag gac cag gca aca gca gag cag cct taa g catcttggaa gatcccgagg      2323
Lys Asp Gln Ala Thr Ala Glu Gln Pro  *
730                 735

ttagattctt aagcaagaga agagttggac ttccaggctg aaggggagaa agtgactctg    2383

ttctcttagc aaccgtctgt agcaaagaag tgcttccagc atcactccag caacacgccc    2443

atgcgtcttc tctcagcgta tttgggtctt ctttgcccaa aagaacacaa aagccttttt    2503

ccattgtatg gaagatagtt tttaagacat ttgaaacttt ctactatagt ttacagaaca    2563

aattatttta tttttattgt aaatcttagt gtggaagagc tgatttctaa aatatgatta    2623

aagtaaatat atacctatga atatcaagag tcgtctccct gagcctgtag ttggaagtga    2683

cgactgtaat ggaatgatgt cttgtataga aattcgaaat gcccttctct gaaataaaga    2743

gaactcctgg gctttctaaa gaggctgcgg gaagccatcc tccactccca ctgtgtgtga    2803

gagcagtgct tctgatcctg ctgtcacccc gacctctggc aggagccggc gccagtagga    2863

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<222> (105)..(2258)

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gctgtgcgga gcggcgcggc acagagcctg ttgttgagct cagt atg tcg tgg gaa      116
                                                 Met Ser Trp Glu
                                                 1

tcc ggg gcc ggg cca ggt cta ggt tcc cag ggg atg gat ctc gtg tgg      164
Ser Gly Ala Gly Pro Gly Leu Gly Ser Gln Gly Met Asp Leu Val Trp
 5                  10                  15                  20

agt gcg tgg tac gga aag tgc gtt aaa ggg aaa ggg tcg ttg cca ctc      212
Ser Ala Trp Tyr Gly Lys Cys Val Lys Gly Lys Gly Ser Leu Pro Leu
 21                 26                  31                  36

tcg gcc cac ggc atc gtg gtc gcc tgg ctc agc agg gcc gag tgg gac      260
Ser Ala His Gly Ile Val Val Ala Trp Leu Ser Arg Ala Glu Trp Asp
 37                 42                  47                  52

cag gtg acg gtt tat ctg ttc tgt gac gac cat aag ttg cag cgg tac      308
Gln Val Thr Val Tyr Leu Phe Cys Asp Asp His Lys Leu Gln Arg Tyr
 53                 58                  63                  68

gcg ctt aac cgc atc acg gtg tgg agg agc agg tca ggc aac gaa ctc      356
Ala Leu Asn Arg Ile Thr Val Trp Arg Ser Arg Ser Gly Asn Glu Leu
 69                 74                  79                  84

cct ctg gca gtg gct tct act gct gac ctg ata cgc tgt aag ctc ttg      404
Pro Leu Ala Val Ala Ser Thr Ala Asp Leu Ile Arg Cys Lys Leu Leu
 85                 90                  95                  100

gat gta act ggt ggc ttg ggc act gat gaa ctt aga ctg ctc tat ggc      452
Asp Val Thr Gly Gly Leu Gly Thr Asp Glu Leu Arg Leu Leu Tyr Gly
101                 106                 111                 116

atg gca ttg gtc agg ttt gtg aat ctt atc tca gag agg aag aca aag      500
Met Ala Leu Val Arg Phe Val Asn Leu Ile Ser Glu Arg Lys Thr Lys
117                 122                 127                 132

ttt gcc aag gtc ccc ctc aag tgt ctg gct caa gag gta aat att ccg      548
Phe Ala Lys Val Pro Leu Lys Cys Leu Ala Gln Glu Val Asn Ile Pro
133                 138                 143                 148

gat tgg att gtt gac ctt cgc cat gag ttg acc cac aag aaa atg ccc      596
Asp Trp Ile Val Asp Leu Arg His Glu Leu Thr His Lys Lys Met Pro
149                 154                 159                 164
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cat ata aat gac tgc cgc aga ggc tgc tac ttt gtc ctg gat tgg ctc      644
His Ile Asn Asp Cys Arg Arg Gly Cys Tyr Phe Val Leu Asp Trp Leu
165                 170                 175                 180

cag aag acc tat tgg tgc cgc caa ctg gag aac agc ctg aga gag acc      692
Gln Lys Thr Tyr Trp Cys Arg Gln Leu Glu Asn Ser Leu Arg Glu Thr
181                 186                 191                 196

tgg gag ttg gag gag ttc agg gaa ggg ata gag gaa gag gat caa gag      740
Trp Glu Leu Glu Glu Phe Arg Glu Gly Ile Glu Glu Glu Asp Gln Glu
197                 202                 207                 212

gaa gat aag aac att gtt gtt gat gac atc aca gaa cag aaa cca gag      788
Glu Asp Lys Asn Ile Val Val Asp Asp Ile Thr Glu Gln Lys Pro Glu
213                 218                 223                 228

cct cag gat gat ggg aaa agt acg gag tca gat gta aag gcc gat gga      836
Pro Gln Asp Asp Gly Lys Ser Thr Glu Ser Asp Val Lys Ala Asp Gly
229                 234                 239                 244

gac agc aaa ggc agc gaa gag gtg gat tct cat tgc aaa aag gcc ctg      884
Asp Ser Lys Gly Ser Glu Glu Val Asp Ser His Cys Lys Lys Ala Leu
245                 250                 255                 260

agt cat aaa gag cta tat gaa aga gcc cga gaa ctg ctg gta tca tac      932
Ser His Lys Glu Leu Tyr Glu Arg Ala Arg Glu Leu Leu Val Ser Tyr
261                 266                 271                 276

gaa gag gag cag ttt acg gtg ctg gag aaa ttt agg tat tta cct aag      980
Glu Glu Glu Gln Phe Thr Val Leu Glu Lys Phe Arg Tyr Leu Pro Lys
277                 282                 287                 292

gcc att aag gcg tgg aat aac ccg tcc cca cgt gta gaa tgt gtc ctg     1028
Ala Ile Lys Ala Trp Asn Asn Pro Ser Pro Arg Val Glu Cys Val Leu
293                 298                 303                 308

gca gag ctc aag ggc gtt aca tgc gag aac agg gag gct gtg ctg gat     1076
Ala Glu Leu Lys Gly Val Thr Cys Glu Asn Arg Glu Ala Val Leu Asp
309                 314                 319                 324

gct ttt ctg gat gat ggc ttc ctt gtc ccc aca ttt gaa cag ttg gca     1124
Ala Phe Leu Asp Asp Gly Phe Leu Val Pro Thr Phe Glu Gln Leu Ala
325                 330                 335                 340

gct ttg cag ata gaa tat gaa gaa aac gtg gac ttg aat gac gtc ctg     1172
Ala Leu Gln Ile Glu Tyr Glu Glu Asn Val Asp Leu Asn Asp Val Leu
341                 346                 351                 356

gtg cca aag ccg ttc tct cag ttc tgg cag ccc ctg ctc agg ggc ctg     1220
Val Pro Lys Pro Phe Ser Gln Phe Trp Gln Pro Leu Leu Arg Gly Leu
357                 362                 367                 372

cac tcc cag aac ttc acg cag gcc cta ttg gag agg atg ctc tct gaa     1268
His Ser Gln Asn Phe Thr Gln Ala Leu Leu Glu Arg Met Leu Ser Glu
373                 378                 383                 388
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10054246.010402

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ctg cca gcc ttg ggg atc agc ggg atc cgg cct acc tac atc ctc aga      1316
Leu Pro Ala Leu Gly Ile Ser Gly Ile Arg Pro Thr Tyr Ile Leu Arg
389                 394                 399                 404

tgg acc gtt gaa ctg atc gtg gcc aac acc aag act gga cgg aat gct      1364
Trp Thr Val Glu Leu Ile Val Ala Asn Thr Lys Thr Gly Arg Asn Ala
405                 410                 415                 420

cgc cga ttt tct gca ggc cag tgg gaa gca aga agg ggc tgg agg ctg      1412
Arg Arg Phe Ser Ala Gly Gln Trp Glu Ala Arg Arg Gly Trp Arg Leu
421                 426                 431                 436

ttc aac tgc tcc gcc tcc ctt gac tgg ccc cgg atg gtt gag tcc tgc      1460
Phe Asn Cys Ser Ala Ser Leu Asp Trp Pro Arg Met Val Glu Ser Cys
437                 442                 447                 452

ttg ggc tca cct tgc tgg gcc agc ccc caa ctc ctt cgg atc atc ttc      1508
Leu Gly Ser Pro Cys Trp Ala Ser Pro Gln Leu Leu Arg Ile Ile Phe
453                 458                 463                 468

aaa gcc atg ggg cag ggc ctg cca gac gag gag cag gag aag ctg ctg      1556
Lys Ala Met Gly Gln Gly Leu Pro Asp Glu Glu Gln Glu Lys Leu Leu
469                 474                 479                 484

cgc atc tgt tcc att tat acc cag agt gga gaa aac agc ctg gtg cag      1604
Arg Ile Cys Ser Ile Tyr Thr Gln Ser Gly Glu Asn Ser Leu Val Gln
485                 490                 495                 500

gag ggc tct gag gcc tcc ccc att ggg aag tct cca tat aca cta gac      1652
Glu Gly Ser Glu Ala Ser Pro Ile Gly Lys Ser Pro Tyr Thr Leu Asp
501                 506                 511                 516

agc ctg tat tgg agc gtc aag cca gcc agc tcc agc ttc ggg tct gaa      1700
Ser Leu Tyr Trp Ser Val Lys Pro Ala Ser Ser Ser Phe Gly Ser Glu
517                 522                 527                 532

gca aag gcc cag caa cag gag gag cag ggc agt gtt aat gat gtc aag      1748
Ala Lys Ala Gln Gln Gln Glu Glu Gln Gly Ser Val Asn Asp Val Lys
533                 538                 543                 548

gaa gag gag aag gag gag aaa gag gtc ttg cca gac cag gta gag gag      1796
Glu Glu Glu Lys Glu Glu Lys Glu Val Leu Pro Asp Gln Val Glu Glu
549                 554                 559                 564

gag gaa gaa aat gat gac caa gag gag gaa gag gag gat gaa gat gat      1844
Glu Glu Glu Asn Asp Asp Gln Glu Glu Glu Glu Glu Asp Glu Asp Asp
565                 570                 575                 580

gaa gat gat gaa gag gaa gac aga atg gag gtg ggg cct ttc tct aca      1892
Glu Asp Asp Glu Glu Glu Asp Arg Met Glu Val Gly Pro Phe Ser Thr
581                 586                 591                 596

ggg caa gag tcc ccc act gcc gag aat gct agg ctt ctg gcc cag aaa      1940
Gly Gln Glu Ser Pro Thr Ala Glu Asn Ala Arg Leu Leu Ala Gln Lys
597                 602                 607                 612

aga gga gct ttg cag ggc tct gca tgg cag gtt agc tca gaa gac gtg      1988
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Arg Gly Ala Leu Gln Gly Ser Ala Trp Gln Val Ser Ser Glu Asp Val
613                 618                 623                 628

cga tgg gac aca ttt ccc cta ggc cga atg cca ggt cag acc gag gac      2036
Arg Trp Asp Thr Phe Pro Leu Gly Arg Met Pro Gly Gln Thr Glu Asp
629                 634                 639                 644

cca gca gag ctc atg ctg gag aat tat gac acc atg tat ctt ttg gac      2084
Pro Ala Glu Leu Met Leu Glu Asn Tyr Asp Thr Met Tyr Leu Leu Asp
645                 650                 655                 660

cag cct gtg cta gag cag cgg ctg gaa ccc tca aca tgc aag act gac      2132
Gln Pro Val Leu Glu Gln Arg Leu Glu Pro Ser Thr Cys Lys Thr Asp
661                 666                 671                 676

acc ttg ggc ctg agc tgt ggt gtc ggc agt ggc aac tgc agc aac agc      2180
Thr Leu Gly Leu Ser Cys Gly Val Gly Ser Gly Asn Cys Ser Asn Ser
677                 682                 687                 692

agc agc agc aac ttc gag ggc ctt ctc tgg agc cag ggg cag ctg cat      2228
Ser Ser Ser Asn Phe Glu Gly Leu Leu Trp Ser Gln Gly Gln Leu His
693                 698                 703                 708

ggg ctc aaa act ggc ctg cag ctc ttc tga t ggccatccct ggtgcaagtg      2279
Gly Leu Lys Thr Gly Leu Gln Leu Phe  *
709                 714

ttcatccagc cgtgccaggg caacagccca ccccctagta caactgatgc tccctgagac    2339

aacctgggag acagcctgga tcagccacat caactcagtt gtccaccaca ggggaatttt    2399

gaatgtcttt tgtttttgtt ttgttttgaa aaataataaa caggcaactg t             2450



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gctgtgcgga gcggcgcggc acagagcctg ttgttgagct cagt atg tcg tgg gaa      116
                                                 Met Ser Trp Glu
                                                 1

tcc ggg gcc ggg cca ggt cta ggt tcc cag ggg atg gat ctc gtg tgg      164
Ser Gly Ala Gly Pro Gly Leu Gly Ser Gln Gly Met Asp Leu Val Trp
  5                 10                  15                  20

agt gcg tgg tac gga aag tgc gtt aaa ggg aaa ggg tcg ttg cca ctc      212
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10037270.010402

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Ser Ala Trp Tyr Gly Lys Cys Val Lys Gly Lys Gly Ser Leu Pro Leu
 21                 26                  31                  36

tcg gcc cac ggc atc gtg gtc gcc tgg ctc agc agg gcc gag tgg gac      260
Ser Ala His Gly Ile Val Val Ala Trp Leu Ser Arg Ala Glu Trp Asp
 37                 42                  47                  52

cag gtg acg gtt tat ctg ttc tgt gac gac cat aag ttg cag cgg tac      308
Gln Val Thr Val Tyr Leu Phe Cys Asp Asp His Lys Leu Gln Arg Tyr
 53                 58                  63                  68

gcg ctt aac cgc atc acg gtg tgg agg agc agg tca ggc aac gaa ctc      356
Ala Leu Asn Arg Ile Thr Val Trp Arg Ser Arg Ser Gly Asn Glu Leu
 69                 74                  79                  84

cct ctg gca gtg gct tct act gct gac ctg ata cgc tgt aag ctc ttg      404
Pro Leu Ala Val Ala Ser Thr Ala Asp Leu Ile Arg Cys Lys Leu Leu
 85                 90                  95                 100

gat gta act ggt ggc ttg ggc act gat gaa ctt aga ctg ctc tat ggc      452
Asp Val Thr Gly Gly Leu Gly Thr Asp Glu Leu Arg Leu Leu Tyr Gly
101                106                 111                 116

atg gca ttg gtc agg ttt gtg aat ctt atc tca gag agg aag aca aag      500
Met Ala Leu Val Arg Phe Val Asn Leu Ile Ser Glu Arg Lys Thr Lys
117                122                 127                 132

ttt gcc aag gtc ccc ctc aag tgt ctg gct caa gag gta aat att ccg      548
Phe Ala Lys Val Pro Leu Lys Cys Leu Ala Gln Glu Val Asn Ile Pro
133                138                 143                 148

gat tgg att gtt gac ctt cgc cat gag ttg acc cac aag aaa atg ccc      596
Asp Trp Ile Val Asp Leu Arg His Glu Leu Thr His Lys Lys Met Pro
149                154                 159                 164

cat ata aat gac tgc cgc aga ggc tgc tac ttt gtc ctg gat tgg ctc      644
His Ile Asn Asp Cys Arg Arg Gly Cys Tyr Phe Val Leu Asp Trp Leu
165                170                 175                 180

cag aag acc tat tgg tgc cgc caa ctg gag aac agc ctg aga gag acc      692
Gln Lys Thr Tyr Trp Cys Arg Gln Leu Glu Asn Ser Leu Arg Glu Thr
181                186                 191                 196

tgg gag ttg gag gag ttc agg gaa ggg ata gag gaa gag gat caa gag      740
Trp Glu Leu Glu Glu Phe Arg Glu Gly Ile Glu Glu Glu Asp Gln Glu
197                202                 207                 212

gaa gat aag aac att gtt gtt gat gac atc aca gaa cag aaa cca gag      788
Glu Asp Lys Asn Ile Val Val Asp Asp Ile Thr Glu Gln Lys Pro Glu
213                218                 223                 228

cct cag gat gat ggg aaa agt acg gag tca gat gta aag gcc gat gga      836
Pro Gln Asp Asp Gly Lys Ser Thr Glu Ser Asp Val Lys Ala Asp Gly
229                234                 239                 244

gac agc aaa ggc agc gaa gag gtg gat tct cat tgc aaa aag gcc ctg      884
Asp Ser Lys Gly Ser Glu Glu Val Asp Ser His Cys Lys Lys Ala Leu
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245                        250                        255                        260

agt cat aaa gag cta tat gaa aga gcc cga gaa ctg ctg gta tca tac       932
Ser His Lys Glu Leu Tyr Glu Arg Ala Arg Glu Leu Leu Val Ser Tyr
261                 266                 271                 276

gaa gag gag cag ttt acg gtg ctg gag aaa ttt agg tat tta cct aag       980
Glu Glu Glu Gln Phe Thr Val Leu Glu Lys Phe Arg Tyr Leu Pro Lys
277                 282                 287                 292

gcc att aag gcg tgg aat aac ccg tcc cca cgt gta gaa tgt gtc ctg      1028
Ala Ile Lys Ala Trp Asn Asn Pro Ser Pro Arg Val Glu Cys Val Leu
293                 298                 303                 308

gca gag ctc aag ggc gtt aca tgc gag aac agg gag gct gtg ctg gat      1076
Ala Glu Leu Lys Gly Val Thr Cys Glu Asn Arg Glu Ala Val Leu Asp
309                 314                 319                 324

gct ttt ctg gat gat ggc ttc ctt gtc ccc aca ttt gaa cag ttg gca      1124
Ala Phe Leu Asp Asp Gly Phe Leu Val Pro Thr Phe Glu Gln Leu Ala
325                 330                 335                 340

gct ttg cag ata gaa tat gaa gat ggt cag act gag gtc cag aga ggg      1172
Ala Leu Gln Ile Glu Tyr Glu Asp Gly Gln Thr Glu Val Gln Arg Gly
341                 346                 351                 356

gaa ggt act gac cca aag tca cac aaa aac gtg gac ttg aat gac gtc      1220
Glu Gly Thr Asp Pro Lys Ser His Lys Asn Val Asp Leu Asn Asp Val
357                 362                 367                 372

ctg gtg cca aag ccg ttc tct cag ttc tgg cag ccc ctg ctc agg ggc      1268
Leu Val Pro Lys Pro Phe Ser Gln Phe Trp Gln Pro Leu Leu Arg Gly
373                 378                 383                 388

ctg cac tcc cag aac ttc acg cag gcc cta ttg gag agg atg ctc tct      1316
Leu His Ser Gln Asn Phe Thr Gln Ala Leu Leu Glu Arg Met Leu Ser
389                 394                 399                 404

gaa ctg cca gcc ttg ggg atc agc ggg atc cgg cct acc tac atc ctc      1364
Glu Leu Pro Ala Leu Gly Ile Ser Gly Ile Arg Pro Thr Tyr Ile Leu
405                 410                 415                 420

aga tgg acc gtt gaa ctg atc gtg gcc aac acc aag act gga cgg aat      1412
Arg Trp Thr Val Glu Leu Ile Val Ala Asn Thr Lys Thr Gly Arg Asn
421                 426                 431                 436

gct cgc cga ttt tct gca ggc cag tgg gaa gca aga agg ggc tgg agg      1460
Ala Arg Arg Phe Ser Ala Gly Gln Trp Glu Ala Arg Arg Gly Trp Arg
437                 442                 447                 452

ctg ttc aac tgc tcc gcc tcc ctt gac tgg ccc cgg atg gtt gag tcc      1508
Leu Phe Asn Cys Ser Ala Ser Leu Asp Trp Pro Arg Met Val Glu Ser
453                 458                 463                 468

tgc ttg ggc tca cct tgc tgg gcc agc ccc caa ctc ctt cgg atc atc      1556
Cys Leu Gly Ser Pro Cys Trp Ala Ser Pro Gln Leu Leu Arg Ile Ile
469                 474                 479                 484
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10034240.010402

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ttc aaa gcc atg ggg cag ggc ctg cca gac gag gag cag gag aag ctg      1604
Phe Lys Ala Met Gly Gln Gly Leu Pro Asp Glu Glu Gln Glu Lys Leu
485                 490                 495                 500

ctg cgc atc tgt tcc att tat acc cag agt gga gaa aac agc ctg gtg      1652
Leu Arg Ile Cys Ser Ile Tyr Thr Gln Ser Gly Glu Asn Ser Leu Val
501                 506                 511                 516

cag gag ggc tct gag gcc tcc ccc att ggg aag tct cca tat aca cta      1700
Gln Glu Gly Ser Glu Ala Ser Pro Ile Gly Lys Ser Pro Tyr Thr Leu
517                 522                 527                 532

gac agc ctg tat tgg agc gtc aag cca gcc agc tcc agc ttc ggg tct      1748
Asp Ser Leu Tyr Trp Ser Val Lys Pro Ala Ser Ser Ser Phe Gly Ser
533                 538                 543                 548

gaa gca aag gcc cag caa cag gag gag cag ggc agt gtt aat gat gtc      1796
Glu Ala Lys Ala Gln Gln Gln Glu Glu Gln Gly Ser Val Asn Asp Val
549                 554                 559                 564

aag gaa gag gag aag gag gag aaa gag gtc ttg cca gac cag gta gag      1844
Lys Glu Glu Glu Lys Glu Glu Lys Glu Val Leu Pro Asp Gln Val Glu
565                 570                 575                 580

gag gag gaa gaa aat gat gac caa gag gag gaa gag gag gat gaa gat      1892
Glu Glu Glu Glu Asn Asp Asp Gln Glu Glu Glu Glu Glu Asp Glu Asp
581                 586                 591                 596

gat gaa gat gat gaa gag gaa gac aga atg gag gtg ggg cct ttc tct      1940
Asp Glu Asp Asp Glu Glu Glu Asp Arg Met Glu Val Gly Pro Phe Ser
597                 602                 607                 612

aca ggg caa gag tcc ccc act gcc gag aat gct agg ctt ctg gcc cag      1988
Thr Gly Gln Glu Ser Pro Thr Ala Glu Asn Ala Arg Leu Leu Ala Gln
613                 618                 623                 628

aaa aga gga gct ttg cag ggc tct gca tgg cag gtt agc tca gaa gac      2036
Lys Arg Gly Ala Leu Gln Gly Ser Ala Trp Gln Val Ser Ser Glu Asp
629                 634                 639                 644

gtg cga tgg gac aca ttt ccc cta ggc cga atg cca ggt cag acc gag      2084
Val Arg Trp Asp Thr Phe Pro Leu Gly Arg Met Pro Gly Gln Thr Glu
645                 650                 655                 660

gac cca gca gag ctc atg ctg gag aat tat gac acc atg tat ctt ttg      2132
Asp Pro Ala Glu Leu Met Leu Glu Asn Tyr Asp Thr Met Tyr Leu Leu
661                 666                 671                 676

gac cag cct gtg cta gag cag cgg ctg gaa ccc tca aca tgc aag act      2180
Asp Gln Pro Val Leu Glu Gln Arg Leu Glu Pro Ser Thr Cys Lys Thr
677                 682                 687                 692

gac acc ttg ggc ctg agc tgt ggt gtc ggc agt ggc aac tgc agc aac      2228
Asp Thr Leu Gly Leu Ser Cys Gly Val Gly Ser Gly Asn Cys Ser Asn
693                 698                 703                 708
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agc agc agc agc aac ttc gag ggc ctt ctc tgg agc cag ggg cag ctg        2276
Ser Ser Ser Ser Asn Phe Glu Gly Leu Leu Trp Ser Gln Gly Gln Leu
709                 714                 719                 724

cat ggg ctc aaa act ggc ctg cag ctc ttc tga tggccatc cctggtgcaa        2327
His Gly Leu Lys Thr Gly Leu Gln Leu Phe  *
725                 730                 735

gtgttcatcc agccgtgcca gggcaacagc ccaccccct a gtacaactga tgctccctga     2387

gacaacctgg gagacagcct ggatcagcca catcaactca gttgtccacc acaggggaat      2447

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agtcacatca agaaatagaa cagaattcag cc atg gcc cca aga aag aga ggt         173
                                    Met Ala Pro Arg Lys Arg Gly
                                     1               5

gga cga ggt att tca ttc atc ttt tgc tgt ttc cga aat aat gat cac         221
Gly Arg Gly Ile Ser Phe Ile Phe Cys Cys Phe Arg Asn Asn Asp His
  8                 13                  18                  23

cca gaa atc acg tat cgg ctg cga aat gat agc aac ttt gcg ctt cag         269
Pro Glu Ile Thr Tyr Arg Leu Arg Asn Asp Ser Asn Phe Ala Leu Gln
 24                 29                  34                  39

acc atg gaa cca gca ttg ccc atg ccc cct gtg gag gag ctg gat gtc         317
Thr Met Glu Pro Ala Leu Pro Met Pro Pro Val Glu Glu Leu Asp Val
 40                 45                  50                  55

atg ttc agt gaa ctg gtg gat gaa ctg gac ctc aca gac aaa cac aga         365
Met Phe Ser Glu Leu Val Asp Glu Leu Asp Leu Thr Asp Lys His Arg
 56                 61                  66                  71

gaa gcc atg ttt gca ctt cca gct gag aaa aaa tgg caa ata tac tgt         413
Glu Ala Met Phe Ala Leu Pro Ala Glu Lys Lys Trp Gln Ile Tyr Cys
 72                 77                  82                  87
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agc aag aaa aag gac cag gaa gaa aac aag gga gct aca agt tgg cct      461
Ser Lys Lys Lys Asp Gln Glu Glu Asn Lys Gly Ala Thr Ser Trp Pro
 88                 93                  98                 103

gaa ttc tac att gat cag ctc aat tcc atg gct gct aga aaa tct ctg      509
Glu Phe Tyr Ile Asp Gln Leu Asn Ser Met Ala Ala Arg Lys Ser Leu
104                 109                 114                119

ctg gct tta gag aag gaa gaa gaa gaa gaa aga agt aaa act ata gag      557
Leu Ala Leu Glu Lys Glu Glu Glu Glu Glu Arg Ser Lys Thr Ile Glu
120                 125                 130                135

agt tta aag aca gca ctg agg aca aaa cca atg agg ttt gta acc aga      605
Ser Leu Lys Thr Ala Leu Arg Thr Lys Pro Met Arg Phe Val Thr Arg
136                 141                 146                151

ttc atc gac ttg gat ggc cta tca tgt atc ctc aac ttt cta aag acc      653
Phe Ile Asp Leu Asp Gly Leu Ser Cys Ile Leu Asn Phe Leu Lys Thr
152                 157                 162                167

atg gac tac gag acc tca gag tct cga ata cat act tct ctc att ggc      701
Met Asp Tyr Glu Thr Ser Glu Ser Arg Ile His Thr Ser Leu Ile Gly
168                 173                 178                183

tgt ata aag gcg tta atg aac aac tct caa ggc cgg gct cac gtc ctg      749
Cys Ile Lys Ala Leu Met Asn Asn Ser Gln Gly Arg Ala His Val Leu
184                 189                 194                199

gct cat tct gag agt att aat gta att gct cag agt ctg agc aca gag      797
Ala His Ser Glu Ser Ile Asn Val Ile Ala Gln Ser Leu Ser Thr Glu
200                 205                 210                215

aac att aaa acg aag gtg gcc gtg ctg gaa atc ttg ggc gcc gtg tgc      845
Asn Ile Lys Thr Lys Val Ala Val Leu Glu Ile Leu Gly Ala Val Cys
216                 221                 226                231

ctg gtt ccc ggg ggc cac aag aag gtt ctg cag gcc atg ctg cac tac      893
Leu Val Pro Gly Gly His Lys Lys Val Leu Gln Ala Met Leu His Tyr
232                 237                 242                247

cag aag tat gcc agc gaa agg acc cgc ttt cag aca tta att aac gac      941
Gln Lys Tyr Ala Ser Glu Arg Thr Arg Phe Gln Thr Leu Ile Asn Asp
248                 253                 258                263

ttg gat aaa agc act ggg cgg tat cga gat gaa gtg agt ctc aag act      989
Leu Asp Lys Ser Thr Gly Arg Tyr Arg Asp Glu Val Ser Leu Lys Thr
264                 269                 274                279

gcc atc atg tcc ttc att aat gca gtg ctc agc caa ggt gca gga gtg     1037
Ala Ile Met Ser Phe Ile Asn Ala Val Leu Ser Gln Gly Ala Gly Val
280                 285                 290                295

gag agt ttg gac ttt aga ctt cat ctt cgc tat gaa ttt ctg atg tta     1085
Glu Ser Leu Asp Phe Arg Leu His Leu Arg Tyr Glu Phe Leu Met Leu
296                 301                 306                311

gga att caa cct gta ata gat aaa tta agg gaa cac gaa aat tca aca     1133
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Gly Ile Gln Pro Val Ile Asp Lys Leu Arg Glu His Glu Asn Ser Thr
312                 317                 322                 327

tta gat agg cat tta gac ttt ttt gaa atg ctc cga aat gaa gat gaa      1181
Leu Asp Arg His Leu Asp Phe Phe Glu Met Leu Arg Asn Glu Asp Glu
328                 333                 338                 343

cta gaa ttt gcc aaa aga ttt gaa ctg gtt cac ata gac aca aaa agt      1229
Leu Glu Phe Ala Lys Arg Phe Glu Leu Val His Ile Asp Thr Lys Ser
344                 349                 354                 359

gca act cag atg ttt gag ctg acc agg aag agg ctg aca cat agt gaa      1277
Ala Thr Gln Met Phe Glu Leu Thr Arg Lys Arg Leu Thr His Ser Glu
360                 365                 370                 375

gct tac ccg cat ttc atg tcc atc ctg cac cac tgc ctc caa atg cct      1325
Ala Tyr Pro His Phe Met Ser Ile Leu His His Cys Leu Gln Met Pro
376                 381                 386                 391

tac aag agg agt ggc aac act gtt cag tac tgg cta cta cta gat aga      1373
Tyr Lys Arg Ser Gly Asn Thr Val Gln Tyr Trp Leu Leu Leu Asp Arg
392                 397                 402                 407

att ata cag cag ata gtt atc cag aat gac aaa gga cag gac cct gac      1421
Ile Ile Gln Gln Ile Val Ile Gln Asn Asp Lys Gly Gln Asp Pro Asp
408                 413                 418                 423

tcc aca cct ttg gaa aac ttt aat att aag aat gtc gta cga atg ttg      1469
Ser Thr Pro Leu Glu Asn Phe Asn Ile Lys Asn Val Val Arg Met Leu
424                 429                 434                 439

gtt aat gaa aat gaa gtt aag cag tgg aaa gaa caa gcg gaa aaa atg      1517
Val Asn Glu Asn Glu Val Lys Gln Trp Lys Glu Gln Ala Glu Lys Met
440                 445                 450                 455

aga aaa gag cac aat gag cta caa cag aaa ctg gaa aag aaa gaa cga      1565
Arg Lys Glu His Asn Glu Leu Gln Gln Lys Leu Glu Lys Lys Glu Arg
456                 461                 466                 471

gaa tgt gat gct aag act caa gag aag gaa gag atg atg cag acc tta      1613
Glu Cys Asp Ala Lys Thr Gln Glu Lys Glu Glu Met Met Gln Thr Leu
472                 477                 482                 487

aat aaa atg aaa gag aaa ctt gaa aag gag act act gag cat aag caa      1661
Asn Lys Met Lys Glu Lys Leu Glu Lys Glu Thr Thr Glu His Lys Gln
488                 493                 498                 503

gtc aag cag cag gtg gcg gac ctc aca gca cag ctc cat gag ctc agc      1709
Val Lys Gln Gln Val Ala Asp Leu Thr Ala Gln Leu His Glu Leu Ser
504                 509                 514                 519

agg agg gcc gtc tgt gct tca atc cca ggt gga ccc tcg cct gga gca      1757
Arg Arg Ala Val Cys Ala Ser Ile Pro Gly Gly Pro Ser Pro Gly Ala
520                 525                 530                 535

cca gga ggg ccc ttt cct tcc tct gtg cct gga tct ctc ctt cct ccc      1805
Pro Gly Gly Pro Phe Pro Ser Ser Val Pro Gly Ser Leu Leu Pro Pro
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536                 541                 546                 551

cca cca ccc cca cct cta cca ggt ggg atg ctt ccc cct cca ccg cct      1853
Pro Pro Pro Pro Pro Leu Pro Gly Gly Met Leu Pro Pro Pro Pro Pro
552                 557                 562                 567

ccc ctc cct cca ggt ggc cct cct cct ccc cca ggg cct cct ccc tta      1901
Pro Leu Pro Pro Gly Gly Pro Pro Pro Pro Pro Gly Pro Pro Pro Leu
568                 573                 578                 583

ggg gca atc atg cca cct cct ggt gct cca atg ggc cta gca ctg aag      1949
Gly Ala Ile Met Pro Pro Pro Gly Ala Pro Met Gly Leu Ala Leu Lys
584                 589                 594                 599

aag aaa agc att cct cag ccc aca aat gcc ctg aaa tcc ttc aac tgg      1997
Lys Lys Ser Ile Pro Gln Pro Thr Asn Ala Leu Lys Ser Phe Asn Trp
600                 605                 610                 615

tct aaa ctg ccc gag aac aaa ctg gaa gga aca gta tgg acc gaa att      2045
Ser Lys Leu Pro Glu Asn Lys Leu Glu Gly Thr Val Trp Thr Glu Ile
616                 621                 626                 631

gat gat aca aaa gtc ttc aaa att cta gat ctt gaa gac ctg gaa aga      2093
Asp Asp Thr Lys Val Phe Lys Ile Leu Asp Leu Glu Asp Leu Glu Arg
632                 637                 642                 647

acc ttc tct gcc tat caa aga cag cag gat ttc ttt gtg aac agt aac      2141
Thr Phe Ser Ala Tyr Gln Arg Gln Gln Asp Phe Phe Val Asn Ser Asn
648                 653                 658                 663

tcc aag cag aaa gaa gca gat gcc att gat gac act ctg agt tcc aaa      2189
Ser Lys Gln Lys Glu Ala Asp Ala Ile Asp Asp Thr Leu Ser Ser Lys
664                 669                 674                 679

ctt aaa gtt aaa gag ctt tcg gtg att gat ggt cgg aga gct cag aat      2237
Leu Lys Val Lys Glu Leu Ser Val Ile Asp Gly Arg Arg Ala Gln Asn
680                 685                 690                 695

tgc aac atc ctt cta tcg agg ttg aaa tta tcc aat gac gaa atc aaa      2285
Cys Asn Ile Leu Leu Ser Arg Leu Lys Leu Ser Asn Asp Glu Ile Lys
696                 701                 706                 711

cgg gca att cta aca atg gac gaa cag gaa gat ctg ccc aag gac atg      2333
Arg Ala Ile Leu Thr Met Asp Glu Gln Glu Asp Leu Pro Lys Asp Met
712                 717                 722                 727

ttg gaa cag ctc ttg aaa ttt gtt cct gaa aaa agt gac att gac cta      2381
Leu Glu Gln Leu Leu Lys Phe Val Pro Glu Lys Ser Asp Ile Asp Leu
728                 733                 738                 743

ttg gag gaa cat aaa cat gaa ctg gat cgg atg gcc aag gct gat agg      2429
Leu Glu Glu His Lys His Glu Leu Asp Arg Met Ala Lys Ala Asp Arg
744                 749                 754                 759

ttc ctt ttt gag atg agc cga att aat cac tat cag caa agg ttg caa      2477
Phe Leu Phe Glu Met Ser Arg Ile Asn His Tyr Gln Gln Arg Leu Gln
760                 765                 770                 775
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tcg ctg tac ttc aaa aag aag ttt gca gag cgt gtg gca gaa gtg aaa      2525
Ser Leu Tyr Phe Lys Lys Lys Phe Ala Glu Arg Val Ala Glu Val Lys
776                 781                 786                 791

cct aaa gtg gaa gca att cgt tct ggc tca gaa gag gtg ttt agg agt      2573
Pro Lys Val Glu Ala Ile Arg Ser Gly Ser Glu Glu Val Phe Arg Ser
792                 797                 802                 807

ggt gcc ctc aag cag ttg ctg gag gtg gtt ttg gca ttt gga aat tat      2621
Gly Ala Leu Lys Gln Leu Leu Glu Val Val Leu Ala Phe Gly Asn Tyr
808                 813                 818                 823

atg aat aaa ggt caa aga ggg aat gca tat gga ttc aag ata tct agc      2669
Met Asn Lys Gly Gln Arg Gly Asn Ala Tyr Gly Phe Lys Ile Ser Ser
824                 829                 834                 839

cta aac aaa att gct gac aca aaa tcc agc atc gac aaa aac att acc      2717
Leu Asn Lys Ile Ala Asp Thr Lys Ser Ser Ile Asp Lys Asn Ile Thr
840                 845                 850                 855

ctt ttg cac tat ctc atc act att gtg gaa aat aag tac ccc agt gtt      2765
Leu Leu His Tyr Leu Ile Thr Ile Val Glu Asn Lys Tyr Pro Ser Val
856                 861                 866                 871

ctc aat cta aat gaa gaa ttg cga gat att cct caa gct gcg aaa gta      2813
Leu Asn Leu Asn Glu Glu Leu Arg Asp Ile Pro Gln Ala Ala Lys Val
872                 877                 882                 887

aac atg act gag ctg gac aaa gaa ata agt acc ttg aga agt ggc ttg      2861
Asn Met Thr Glu Leu Asp Lys Glu Ile Ser Thr Leu Arg Ser Gly Leu
888                 893                 898                 903

aaa gca gta gag aca gag ctg gaa tat cag aag tct cag ccc cca cag      2909
Lys Ala Val Glu Thr Glu Leu Glu Tyr Gln Lys Ser Gln Pro Pro Gln
904                 909                 914                 919

ccc gga gat aag ttt gtg tct gtt gtc agc cag ttc atc aca gta gcc      2957
Pro Gly Asp Lys Phe Val Ser Val Val Ser Gln Phe Ile Thr Val Ala
920                 925                 930                 935

agc ttc agc ttc tct gat gtt gaa gac ctt cta gca gaa gct aaa gac      3005
Ser Phe Ser Phe Ser Asp Val Glu Asp Leu Leu Ala Glu Ala Lys Asp
936                 941                 946                 951

ctg ttt act aaa gca gtg aag cac ttt ggg gaa gag gct ggc aaa ata      3053
Leu Phe Thr Lys Ala Val Lys His Phe Gly Glu Glu Ala Gly Lys Ile
952                 957                 962                 967

caa cca gat gag ttc ttt ggc att ttt gat caa ttt ctt caa gct gtg      3101
Gln Pro Asp Glu Phe Phe Gly Ile Phe Asp Gln Phe Leu Gln Ala Val
968                 973                 978                 983

tca gaa gcc aaa caa gaa aac gaa aat atg aga aag aaa aag gag gaa      3149
Ser Glu Ala Lys Gln Glu Asn Glu Asn Met Arg Lys Lys Lys Glu Glu
984                 989                 994                 999
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Glu Glu Arg Arg Ala Arg Met Glu Ala Gln Leu Lys Glu Gln Arg Glu
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agg gaa cgt aaa atg aga aaa gct aaa gag aat agt gaa gaa agc gga 3245
Arg Glu Arg Lys Met Arg Lys Ala Lys Glu Asn Ser Glu Glu Ser Gly
1016 1021 1026 1031

gag ttt gat gac ctt gtt tca gct tta cgc tca gga gaa gtg ttt gac 3293
Glu Phe Asp Asp Leu Val Ser Ala Leu Arg Ser Gly Glu Val Phe Asp
1032 1037 1042 1047

aaa gac ctt tct aaa ttg aaa cgg aat cgc aaa cgt att acc aac cag 3341
Lys Asp Leu Ser Lys Leu Lys Arg Asn Arg Lys Arg Ile Thr Asn Gln
1048 1053 1058 1063

atg act gac agc agc aga gag aga cca atc aca aaa ctt aat ttc taa 3389
Met Thr Asp Ser Ser Arg Glu Arg Pro Ile Thr Lys Leu Asn Phe *
1064 1069 1074 1079

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caaaaccttt cgtgtatgca ttcacattga gtgtggctca ttttctttcc ccgaacgcca 3689

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gttggacatc aatttttttcc cctgatttca tcaagttatc tctgccaagt gctcttgata 4109

atttcttcag atttttggaa aaaaacacta tataaatgca atccatgctt tttttaaaga 4169

acaacattgc cagagtatgc ttgttctaac aatatagata tataaacctt aaaaataata 4229

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                     Met Asp Phe Ser Arg Leu His Met Tyr Ser Pro
                      1               5

ccc cag tgt gtg ccg gag aac acg ggc tac acg tat gcg ctc agt tcc      157
Pro Gln Cys Val Pro Glu Asn Thr Gly Tyr Thr Tyr Ala Leu Ser Ser
 12                 17                  22                  27

agc tat tct tca gat gct ctg gat ttt gag acg gag cac aaa ttg gac      205
Ser Tyr Ser Ser Asp Ala Leu Asp Phe Glu Thr Glu His Lys Leu Asp
 28                 33                  38                  43

cct gta ttt gat tct cca cgg atg tcc cgc cgt agt ttg cgc ctg gcc      253
Pro Val Phe Asp Ser Pro Arg Met Ser Arg Arg Ser Leu Arg Leu Ala
 44                 49                  54                  59

acg aca gca tgc acc ctg ggg gat ggt gag gct gtg ggt gcc gac agc      301
Thr Thr Ala Cys Thr Leu Gly Asp Gly Glu Ala Val Gly Ala Asp Ser
 60                 65                  70                  75

ggc acc agc agc gct gtc tcc ctg aag aac cga gcg gcc aga aca aca      349
Gly Thr Ser Ser Ala Val Ser Leu Lys Asn Arg Ala Ala Arg Thr Thr
 76                 81                  86                  91

aaa cag cgc aga agc aca aac aaa tca gct ttt agt atc aac cac gtg      397
Lys Gln Arg Arg Ser Thr Asn Lys Ser Ala Phe Ser Ile Asn His Val
 92                 97                 102                 107

tca agg cag gtc acg tcc tct ggc gtc agc tac ggc ggc act gtc agc      445
Ser Arg Gln Val Thr Ser Ser Gly Val Ser Tyr Gly Gly Thr Val Ser
108                113                 118                 123

ctg cag gat gct gtg act cga cgg cct cct gta ttg gac gag tct tgg      493
Leu Gln Asp Ala Val Thr Arg Arg Pro Pro Val Leu Asp Glu Ser Trp
124                129                 134                 139

att cgt gaa cag acc aca gtg gac cac ttc tgg ggt ctt gat gat gat      541
Ile Arg Glu Gln Thr Thr Val Asp His Phe Trp Gly Leu Asp Asp Asp
140                145                 150                 155

ggt gat ctt aaa ggt gga aat aaa gct gcc att cag gga aac ggg gat      589
Gly Asp Leu Lys Gly Gly Asn Lys Ala Ala Ile Gln Gly Asn Gly Asp
156                161                 166                 171

gtg gga gtc gcc gcc gcc acc gcg cac aac ggc ttc tcc tgc agc aac      637
Val Gly Val Ala Ala Ala Thr Ala His Asn Gly Phe Ser Cys Ser Asn
172                177                 182                 187
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tgc agc atg ctg tcc gag cgc aag gac gtg ctc acg gcg cac ccc gcg      685
Cys Ser Met Leu Ser Glu Arg Lys Asp Val Leu Thr Ala His Pro Ala
188                 193                 198                 203

gcc ccc ggg ccc gtg tcg aga gtt tat tct agg gac agg aat caa aaa      733
Ala Pro Gly Pro Val Ser Arg Val Tyr Ser Arg Asp Arg Asn Gln Lys
204                 209                 214                 219

tgc gac gac tgt aag ggc aag agg cac ctc gac gcg cac ccc ggt cgg      781
Cys Asp Asp Cys Lys Gly Lys Arg His Leu Asp Ala His Pro Gly Arg
220                 225                 230                 235

gca ggg acc ctc tgg cac atc tgg gca tgt gca ggt tac ttc ttg ctg      829
Ala Gly Thr Leu Trp His Ile Trp Ala Cys Ala Gly Tyr Phe Leu Leu
236                 241                 246                 251

cag att ctg cgc agg atc gga gct gtg ggc cag gct gtg tcc agg acg      877
Gln Ile Leu Arg Arg Ile Gly Ala Val Gly Gln Ala Val Ser Arg Thr
252                 257                 262                 267

gcg tgg tcg gcc ctt tgg ctg gcc gtg gtt gct cca ggg aag gca gcc      925
Ala Trp Ser Ala Leu Trp Leu Ala Val Val Ala Pro Gly Lys Ala Ala
268                 273                 278                 283

tct gga gtg ttc tgg tgg ctg ggg att gga tgg tac cag ttt gtt act      973
Ser Gly Val Phe Trp Trp Leu Gly Ile Gly Trp Tyr Gln Phe Val Thr
284                 289                 294                 299

ttg att tct tgg ctg aat gtg ttt ctt ctt acc agg tgc ctt cga aac     1021
Leu Ile Ser Trp Leu Asn Val Phe Leu Leu Thr Arg Cys Leu Arg Asn
300                 305                 310                 315

atc tgc aag ttt tta gtc ttg ctc atc cca ctc ttc ctt tta cta gca     1069
Ile Cys Lys Phe Leu Val Leu Leu Ile Pro Leu Phe Leu Leu Leu Ala
316                 321                 326                 331

ggt ctc tcc tta cgg ggc cag ggc aat ttc ttt tcg ttc ttg ccc gtg     1117
Gly Leu Ser Leu Arg Gly Gln Gly Asn Phe Phe Ser Phe Leu Pro Val
332                 337                 342                 347

ttg aac tgg gca agc atg cat aga aca cag cgg gtg gat gac ccc cag     1165
Leu Asn Trp Ala Ser Met His Arg Thr Gln Arg Val Asp Asp Pro Gln
348                 353                 358                 363

gac gtg ttt aaa ccc acg act tct cgc ctg aag cag cct ctg cag ggt     1213
Asp Val Phe Lys Pro Thr Thr Ser Arg Leu Lys Gln Pro Leu Gln Gly
364                 369                 374                 379

gac agt gag gct ttt ccg tgg cat tgg atg agt ggc gtg gag cag cag     1261
Asp Ser Glu Ala Phe Pro Trp His Trp Met Ser Gly Val Glu Gln Gln
380                 385                 390                 395

gtg gcc tct ctg tct gga cag tgc cac cac cat ggt gag aat ctc cga     1309
Val Ala Ser Leu Ser Gly Gln Cys His His His Gly Glu Asn Leu Arg
396                 401                 406                 411
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gag ctg acc act ttg cta cag aag ctg cag gct cgg gtg gac cag atg     1357
Glu Leu Thr Thr Leu Leu Gln Lys Leu Gln Ala Arg Val Asp Gln Met
412                 417                 422                 427

gaa ggc ggc gct gcc ggg ccg tca gct tcg gtc aga gac gct gtg gga     1405
Glu Gly Gly Ala Ala Gly Pro Ser Ala Ser Val Arg Asp Ala Val Gly
428                 433                 438                 443

cag ccc ccg agg gag act gac ttt atg gcc ttt cac caa gaa cat gaa     1453
Gln Pro Pro Arg Glu Thr Asp Phe Met Ala Phe His Gln Glu His Glu
444                 449                 454                 459

gtg cgt atg tca cac ttg gaa gat att ctg gga aaa ctg aga gaa aaa     1501
Val Arg Met Ser His Leu Glu Asp Ile Leu Gly Lys Leu Arg Glu Lys
460                 465                 470                 475

tct gag gcc atc cag aag gaa cta gaa cag acc aag caa aaa aca atc     1549
Ser Glu Ala Ile Gln Lys Glu Leu Glu Gln Thr Lys Gln Lys Thr Ile
476                 481                 486                 491

agt gcg gtt ggt gag cag ctc ctg ccc aca gtc gag cac ctc cag ctg     1597
Ser Ala Val Gly Glu Gln Leu Leu Pro Thr Val Glu His Leu Gln Leu
492                 497                 502                 507

gag ctg gat cag cta aag tca gag ctg tcc agc tgg cga cac gtg aag     1645
Glu Leu Asp Gln Leu Lys Ser Glu Leu Ser Ser Trp Arg His Val Lys
508                 513                 518                 523

acc ggc tgt gag aca gtg gat gcc gta caa gaa aga gtg gac gtg caa     1693
Thr Gly Cys Glu Thr Val Asp Ala Val Gln Glu Arg Val Asp Val Gln
524                 529                 534                 539

gtc aga gaa atg gtg aaa ctc ctg ttt tcc gaa gat cag caa ggc ggt     1741
Val Arg Glu Met Val Lys Leu Leu Phe Ser Glu Asp Gln Gln Gly Gly
540                 545                 550                 555

tct ctg gaa cag ctg ctg cag agg ttc tca tca cag ttt gtg agc aaa     1789
Ser Leu Glu Gln Leu Leu Gln Arg Phe Ser Ser Gln Phe Val Ser Lys
556                 561                 566                 571

ggc gac ttg cag acg atg ctg cga gac ctg cag ctg cag atc ctg cgg     1837
Gly Asp Leu Gln Thr Met Leu Arg Asp Leu Gln Leu Gln Ile Leu Arg
572                 577                 582                 587

aac gtc acc cac cac gtt tcc gtg acc aag cag ctc cca acc tca gaa     1885
Asn Val Thr His His Val Ser Val Thr Lys Gln Leu Pro Thr Ser Glu
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gcc gtg gtg tct gct gtg agc gag gcg ggg gcg tct gga ata aca gag     1933
Ala Val Val Ser Ala Val Ser Glu Ala Gly Ala Ser Gly Ile Thr Glu
604                 609                 614                 619

gcg caa gca cgt gcc atc gtg aac agc gcc ttg aag ctg tat tcc caa     1981
Ala Gln Ala Arg Ala Ile Val Asn Ser Ala Leu Lys Leu Tyr Ser Gln
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gat aag acc ggg atg gtg gac ttt gct ctg gaa tct ggt ggt ggc agc     2029
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Ile Leu Ser Thr Arg Cys Ser Glu Thr Tyr Glu Thr Lys Thr Ala Leu
652                 657                 662                 667

atg agt ctg ttt ggg atc ccg ctg tgg tac ttc tcg cag tcc ccg cgc      2125
Met Ser Leu Phe Gly Ile Pro Leu Trp Tyr Phe Ser Gln Ser Pro Arg
668                 673                 678                 683

gtg gtc atc cag cct gac att tac ccc ggt aac tgc tgg gca ttt aaa      2173
Val Val Ile Gln Pro Asp Ile Tyr Pro Gly Asn Cys Trp Ala Phe Lys
684                 689                 694                 699

ggc tcc cag ggg tac ctg gtg gtg agg ctc tcc atg atg atc cac cca      2221
Gly Ser Gln Gly Tyr Leu Val Val Arg Leu Ser Met Met Ile His Pro
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gcc gcc ttc act ctg gag cac atc cct aag acg ctg tcg cca aca ggc      2269
Ala Ala Phe Thr Leu Glu His Ile Pro Lys Thr Leu Ser Pro Thr Gly
716                 721                 726                 731

aac atc agc agc gcc ccc aag gac ttc gcc gtc tat gga tta gaa aat      2317
Asn Ile Ser Ser Ala Pro Lys Asp Phe Ala Val Tyr Gly Leu Glu Asn
732                 737                 742                 747

gag tat cag gaa gaa ggg cag ctt ctg gga cag ttc acg tat gat cag      2365
Glu Tyr Gln Glu Glu Gly Gln Leu Leu Gly Gln Phe Thr Tyr Asp Gln
748                 753                 758                 763

gat ggg gag tcg ctc cag atg ttc cag gcc ctg aaa aga ccc gac gac      2413
Asp Gly Glu Ser Leu Gln Met Phe Gln Ala Leu Lys Arg Pro Asp Asp
764                 769                 774                 779

aca gct ttc caa ata gtg gaa ctt cgg att ttt tct aac tgg ggc cat      2461
Thr Ala Phe Gln Ile Val Glu Leu Arg Ile Phe Ser Asn Trp Gly His
780                 785                 790                 795

cct gag tat acc tgt ctg tat cgg ttc aga gtt cat ggc gaa cct gtc      2509
Pro Glu Tyr Thr Cys Leu Tyr Arg Phe Arg Val His Gly Glu Pro Val
796                 801                 806                 811

aag tga agacactact cattattttt gtacattttt gtatatactg ggacagcgtg      2565
Lys  *
812

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Gly Gln Val Ile Gly Thr Leu Pro Trp Val Val Asn Ser Ala Ser Val
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gcg gcc cca gca cca gcc caa agc ctg cag gtc cag gcc gtg acc ccc      685
Ala Ala Pro Ala Pro Ala Gln Ser Leu Gln Val Gln Ala Val Thr Pro
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cag ctg ttg ttg aac gcc cag ggc cag gtg att gcg acc ctg gct agc      733
Gln Leu Leu Leu Asn Ala Gln Gly Gln Val Ile Ala Thr Leu Ala Ser
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agc ccc ctg cct cca cct gtg gct gtc cgg aag cca agc aca cct gag      781
Ser Pro Leu Pro Pro Pro Val Ala Val Arg Lys Pro Ser Thr Pro Glu
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tcc cct gct aag agt gag gtg cag ccc atc cag ccc aca cca acc gtg      829
Ser Pro Ala Lys Ser Glu Val Gln Pro Ile Gln Pro Thr Pro Thr Val
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ccc cag cct gct gtg gtc att gcc agc cca gct cca gcc gcc aag cca      877
Pro Gln Pro Ala Val Val Ile Ala Ser Pro Ala Pro Ala Ala Lys Pro
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tct gcc tct gct cct atc cca att acc tgc tca gag acc ccc acc gtc      925
Ser Ala Ser Ala Pro Ile Pro Ile Thr Cys Ser Glu Thr Pro Thr Val
110                115                 120                 125

agc cag ttg gtg tcc aag cca cat act cca agt ctg gat gag gat ggg      973
Ser Gln Leu Val Ser Lys Pro His Thr Pro Ser Leu Asp Glu Asp Gly
126                131                 136                 141

atc aac tta gaa gag atc cgg gag ttt gcc aag aac ttt aag atc cgg     1021
Ile Asn Leu Glu Glu Ile Arg Glu Phe Ala Lys Asn Phe Lys Ile Arg
142                147                 152                 157

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Ala Thr Glu Gly Pro Ala Tyr Ser Gln Ser Ala Ile Cys Arg Phe Glu
174                 179                 184                 189

aag cta gac atc aca ccc aag agt gcc cag aag cta aag ccg gtg ctg      1165
Lys Leu Asp Ile Thr Pro Lys Ser Ala Gln Lys Leu Lys Pro Val Leu
190                 195                 200                 205

gaa aag tgg cta aac gaa gct gaa ctg cgg aac cag gaa ggc cag cag      1213
Glu Lys Trp Leu Asn Glu Ala Glu Leu Arg Asn Gln Glu Gly Gln Gln
206                 211                 216                 221

aac ctg atg gag ttt gtg gga ggc gag ccc tcc aag aaa cgc aaa cgc      1261
Asn Leu Met Glu Phe Val Gly Gly Glu Pro Ser Lys Lys Arg Lys Arg
222                 227                 232                 237

cgc acc tcc ttc acc ccc cag gcc ata gag gct ctc aat gcc tat ttt      1309
Arg Thr Ser Phe Thr Pro Gln Ala Ile Glu Ala Leu Asn Ala Tyr Phe
238                 243                 248                 253

gag aag aac cca ctg ccc aca ggc cag gag atc act gaa att gct aag      1357
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254                 259                 264                 269

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302

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cactgccctt ccgcccccca cactttgcct gcaggtgcac cgaaaggact tgggagataa    1990

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Thr Met Phe Tyr Tyr Ile Cys Leu Arg Arg Arg Ala Arg Thr Ala Thr
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aga gga gaa atg atg aac acc cat aga gct ata gaa tca aac agc cag      567
Arg Gly Glu Met Met Asn Thr His Arg Ala Ile Glu Ser Asn Ser Gln
 28                 33                  38                  43
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 44                 49                  54                  59

gat ttc agt tcc cat tat gga agt gag aat agt atg tcc tat act atg      663
Asp Phe Ser Ser His Tyr Gly Ser Glu Asn Ser Met Ser Tyr Thr Met
 60                 65                  70                  75

tgg aat ttg gct ggt gta cca aat gta ttc cca agt tct ggt gac ttt      711
Trp Asn Leu Ala Gly Val Pro Asn Val Phe Pro Ser Ser Gly Asp Phe
 76                 81                  86                  91

act cag aca gct gtg ttt cga act tat ggg aca tgg tgg gat cag tgt      759
Thr Gln Thr Ala Val Phe Arg Thr Tyr Gly Thr Trp Trp Asp Gln Cys
 92                 97                 102                 107

cct agt gct tcc ttg cca ttc aag agg acg cca cct aat ttt cag agc      807
Pro Ser Ala Ser Leu Pro Phe Lys Arg Thr Pro Pro Asn Phe Gln Ser
108                113                 118                 123

cag gac tat gtg gaa ctt act ttt gaa caa cag gtg tat cct aca gct      855
Gln Asp Tyr Val Glu Leu Thr Phe Glu Gln Gln Val Tyr Pro Thr Ala
124                129                 134                 139

gta cat gtt cta gaa acc tat cat ccc gga gca gtc att aga att ctc      903
Val His Val Leu Glu Thr Tyr His Pro Gly Ala Val Ile Arg Ile Leu
140                145                 150                 155

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156                161                 166                 171

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Trp Glu Ile Leu Trp Ser Glu Arg Pro Thr Lys Val Asn Ala Ser Gln
172                177                 182                 187

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188                193                 198                 203

ctt ata cga ctg gaa gta aat agt tct ctt ctg gaa tat tac act gaa     1095
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204                209                 214                 219

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Leu Asp Ala Val Val Leu His Gly Val Lys Asp Lys Pro Val Leu Ser
220                225                 230                 235

ctc aag act tca ctt att gac atg aat gat ata gaa gat gat gcc tat     1191
Leu Lys Thr Ser Leu Ile Asp Met Asn Asp Ile Glu Asp Asp Ala Tyr
236                241                 246                 251

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Ala Glu Lys Asp Gly Cys Gly Met Asp Ser Leu Asn Lys Lys Phe Ser
252                257                 262                 267

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268 273 278 283

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284 289 294 299

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316 321 326 331

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332 337 342 347

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Val Ser Pro Ala Ser Leu Arg Lys Leu Leu Glu Ser Cys Lys Asp Leu
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Thr Met Phe Tyr Tyr Ile Cys Leu Arg Arg Arg Ala Arg Thr Ala Thr
 12                 17                  22                  27

aga gga gaa atg atg aac acc cat aga gct ata gaa tca aac agc cag       567
Arg Gly Glu Met Met Asn Thr His Arg Ala Ile Glu Ser Asn Ser Gln
 28                 33                  38                  43

act tcc cct ctc aat gca gag gta gtc cag tat gcc aaa gaa gta gtg       615
Thr Ser Pro Leu Asn Ala Glu Val Val Gln Tyr Ala Lys Glu Val Val
 44                 49                  54                  59

gat ttc agt tcc cat tat gga agt gag aat agt atg tcc tat act atg       663
Asp Phe Ser Ser His Tyr Gly Ser Glu Asn Ser Met Ser Tyr Thr Met
 60                 65                  70                  75

tgg aat ttg gct ggt gta cca aat gta ttc cca agt tct ggt gac ttt       711
Trp Asn Leu Ala Gly Val Pro Asn Val Phe Pro Ser Ser Gly Asp Phe
 76                 81                  86                  91

act cag aca gct gtg ttt cga act tat ggg aca tgg tgg gat cag tgt       759
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Thr Gln Thr Ala Val Phe Arg Thr Tyr Gly Thr Trp Trp Asp Gln Cys
 92                 97                 102                 107

cct agt gct tcc ttg cca ttc aag agg acg cca cct aat ttt cag agc      807
Pro Ser Ala Ser Leu Pro Phe Lys Arg Thr Pro Pro Asn Phe Gln Ser
108                113                 118                 123

cag gac tat gtg gaa ctt act ttt gaa caa cag gtg tat cct aca gct      855
Gln Asp Tyr Val Glu Leu Thr Phe Glu Gln Gln Val Tyr Pro Thr Ala
124                129                 134                 139

gta cat gtt cta gaa acc tat cat ccc gga gca gtc att aga att ctc      903
Val His Val Leu Glu Thr Tyr His Pro Gly Ala Val Ile Arg Ile Leu
140                145                 150                 155

gct tgt tct gca aat cct tat tcc cca aat cca cca gct gaa gta aga      951
Ala Cys Ser Ala Asn Pro Tyr Ser Pro Asn Pro Pro Ala Glu Val Arg
156                161                 166                 171

tgg gag att ctt tgg tca gag aga cct acg aag gtt aat gct tcc caa      999
Trp Glu Ile Leu Trp Ser Glu Arg Pro Thr Lys Val Asn Ala Ser Gln
172                177                 182                 187

gct cgc cag ttt aaa cct tgt att aag cag ata aat ttc ccc aca aat     1047
Ala Arg Gln Phe Lys Pro Cys Ile Lys Gln Ile Asn Phe Pro Thr Asn
188                193                 198                 203

ctt ata cga ctg gaa gta aat agt tct ctt ctg gaa tat tac act gaa     1095
Leu Ile Arg Leu Glu Val Asn Ser Ser Leu Leu Glu Tyr Tyr Thr Glu
204                209                 214                 219

tta gat gca gtt gtg cta cat ggt gtg aag gac aag cca gtg ctt tct     1143
Leu Asp Ala Val Val Leu His Gly Val Lys Asp Lys Pro Val Leu Ser
220                225                 230                 235

ctc aag act tca ctt att gac atg aat gat ata gaa gat gat gcc tat     1191
Leu Lys Thr Ser Leu Ile Asp Met Asn Asp Ile Glu Asp Asp Ala Tyr
236                241                 246                 251

gca gaa aag gat ggt tgt gga atg gac agt ctt aac aaa aag ttt agc     1239
Ala Glu Lys Asp Gly Cys Gly Met Asp Ser Leu Asn Lys Lys Phe Ser
252                257                 262                 267

agt gct gtc ctc ggg gaa ggg cca aat aat ggg tat ttt gat aaa cta     1287
Ser Ala Val Leu Gly Glu Gly Pro Asn Asn Gly Tyr Phe Asp Lys Leu
268                273                 278                 283

cct tat gag ctt att cag ctg att ctg aat cat ctt aca cta cca gac     1335
Pro Tyr Glu Leu Ile Gln Leu Ile Leu Asn His Leu Thr Leu Pro Asp
284                289                 294                 299

ctg tgt aga tta gca cag act tgc aaa cta ctg agc cag cat tgc tgt     1383
Leu Cys Arg Leu Ala Gln Thr Cys Lys Leu Leu Ser Gln His Cys Cys
300                305                 310                 315

gat cct ctg caa tac atc cac ctc aat ctg caa cca tac tgg gca aaa     1431
Asp Pro Leu Gln Tyr Ile His Leu Asn Leu Gln Pro Tyr Trp Ala Lys
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316                 321                 326                 331

cta gat gac act tct ctg gaa ttt cta cag tct cgc tgc act ctt gtc     1479
Leu Asp Asp Thr Ser Leu Glu Phe Leu Gln Ser Arg Cys Thr Leu Val
332                 337                 342                 347

cag tgg ctt aat tta tct tgg act ggc aat aga ggc ttc atc tct gtt     1527
Gln Trp Leu Asn Leu Ser Trp Thr Gly Asn Arg Gly Phe Ile Ser Val
348                 353                 358                 363

gca gga ttt agc agg ttt ctg aag gtt tgt gga tcc gaa tta gta cgc     1575
Ala Gly Phe Ser Arg Phe Leu Lys Val Cys Gly Ser Glu Leu Val Arg
364                 369                 374                 379

ctt gaa ttg tct tgc agc cac ttt ctt aat gaa act tgc tta gaa gtt     1623
Leu Glu Leu Ser Cys Ser His Phe Leu Asn Glu Thr Cys Leu Glu Val
380                 385                 390                 395

att tct gag atg tgt cca aat cta cag gcc tta aat ctc tcc tcc tgt     1671
Ile Ser Glu Met Cys Pro Asn Leu Gln Ala Leu Asn Leu Ser Ser Cys
396                 401                 406                 411

gat aag cta cca cct caa gct ttc aac cac att gcc aag tta tgc agc     1719
Asp Lys Leu Pro Pro Gln Ala Phe Asn His Ile Ala Lys Leu Cys Ser
412                 417                 422                 427

ctt aaa cga ctt gtt ctc tat cga aca aaa gta gag att gaa gac tat     1767
Leu Lys Arg Leu Val Leu Tyr Arg Thr Lys Val Glu Ile Glu Asp Tyr
428                 433                 438                 443

gat gtg ata gct agc atg ata gga gcc aag tgt aaa aaa ctc cgg acc     1815
Asp Val Ile Ala Ser Met Ile Gly Ala Lys Cys Lys Lys Leu Arg Thr
444                 449                 454                 459

ctg gat ctg tgg aga tgt aag aat att act gag aat gga ata gca gaa     1863
Leu Asp Leu Trp Arg Cys Lys Asn Ile Thr Glu Asn Gly Ile Ala Glu
460                 465                 470                 475

ctg gct tct ggg tgt cca cta ctg gag gag ctt gac ctt ggc tgg tgc     1911
Leu Ala Ser Gly Cys Pro Leu Leu Glu Glu Leu Asp Leu Gly Trp Cys
476                 481                 486                 491

cca act ctg cag agc agc acc ggg tgc ttc acc aga ctg gca cac cag     1959
Pro Thr Leu Gln Ser Ser Thr Gly Cys Phe Thr Arg Leu Ala His Gln
492                 497                 502                 507

ctc cca aac ttg caa aaa ctc ttt ctt aca gct aat aga tct gtg tgt     2007
Leu Pro Asn Leu Gln Lys Leu Phe Leu Thr Ala Asn Arg Ser Val Cys
508                 513                 518                 523

gac aca gac att gat gaa ttg gca tgt aat tgt acc agg tta cag cag     2055
Asp Thr Asp Ile Asp Glu Leu Ala Cys Asn Cys Thr Arg Leu Gln Gln
524                 529                 534                 539

ctg gac ata tta gga aca aga atg gta agt ccg gca tcc tta aga aaa     2103
Leu Asp Ile Leu Gly Thr Arg Met Val Ser Pro Ala Ser Leu Arg Lys
540                 545                 550                 555
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ctc ctg gaa tct tgt aaa gat ctt tct tta ctt gat gtg tcc ttc tgt      2151
Leu Leu Glu Ser Cys Lys Asp Leu Ser Leu Leu Asp Val Ser Phe Cys
556                 561                 566                 571

tcg cag att gat aac aga gct gtg cta gaa ctg aat gca agc ttt cca      2199
Ser Gln Ile Asp Asn Arg Ala Val Leu Glu Leu Asn Ala Ser Phe Pro
572                 577                 582                 587

aaa gtg ttc ata aaa aag agc ttt act cag tga cttaatat atgttctgta      2250
Lys Val Phe Ile Lys Lys Ser Phe Thr Gln  *
588                 593                 598

ttaaaattaa tgtgctttgt tggggtttaa ttttgggatt ggttttgggt tttgttttta    2310

gttgttttaa tggtaagaat taagacattt gtagatttta aagaaaaata tgaaattgtc    2370

cattaaatca agtaaaaatg tgcacaaatg ttttcataaa atactgcaag cacttctctt    2430

caagaatatg agtggatatt atttttacct tatgttaatc agtgatatgc tttagtcaat    2490

aatatgattg ataaaagaat aacatggaat catgctaact tattttcaaa ggaacactga    2550

gcaataaagt atcgtggcat ttatgcaaaa aaaaaagtta attttttaca ccttcatgta    2610

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tgttcaactg gaaaattttt agtttttcta gccaggtgtg gtggcacaca cttgtagtcc    2790

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cccatttcaa atgatgacct gctggttgtt gagaaatacc agcgaaggcg gaagtacagc     300

ctgtctgccg tgtttcattc agccacc    atg ttg caa gat gtt ggt gag gcc      351
                                 Met Leu Gln Asp Val Gly Glu Ala
                                   1               5

att cag ttt gaa gtc agc att ggg aac tat ggc aac aag ttt gac acc       399
Ile Gln Phe Glu Val Ser Ile Gly Asn Tyr Gly Asn Lys Phe Asp Thr
  9                 14                  19                  24

acc tgt aag cct ttg gca tca aca act cag tac agc cgt gct gta ttt       447
Thr Cys Lys Pro Leu Ala Ser Thr Thr Gln Tyr Ser Arg Ala Val Phe
 25                 30                  35                  40

gat ggc aac tac tat tat tac ttg cct tgg gcc cac acc aag cca gtt       495
Asp Gly Asn Tyr Tyr Tyr Tyr Leu Pro Trp Ala His Thr Lys Pro Val
 41                 46                  51                  56

gtt acc ctg act tca tac tgg gag gat att agt cat cgc ctg gat gcg       543
Val Thr Leu Thr Ser Tyr Trp Glu Asp Ile Ser His Arg Leu Asp Ala
 57                 62                  67                  72

gtg aac act ctc cta gct atg gca gaa cgg ctg caa aca aat ata gaa       591
Val Asn Thr Leu Leu Ala Met Ala Glu Arg Leu Gln Thr Asn Ile Glu
 73                 78                  83                  88

gct cta aaa tca ggg ata caa ggt aaa att cct gca aac cag ctg gct       639
Ala Leu Lys Ser Gly Ile Gln Gly Lys Ile Pro Ala Asn Gln Leu Ala
 89                 94                  99                 104

gaa ttg tgg ctg aag ctg ata gat gaa gtt ata gaa gac acg aga tac       687
Glu Leu Trp Leu Lys Leu Ile Asp Glu Val Ile Glu Asp Thr Arg Tyr
105                110                 115                 120

acg ttg cct ctc aca gaa gga aaa gcc aac gtc aca gtt ctc gat act       735
Thr Leu Pro Leu Thr Glu Gly Lys Ala Asn Val Thr Val Leu Asp Thr
121                126                 131                 136

cag atc cga aag ctg cgg tcc agg tct ctc tcc caa ata cat gag gcg       783
Gln Ile Arg Lys Leu Arg Ser Arg Ser Leu Ser Gln Ile His Glu Ala
137                142                 147                 152

gct gtg agg atg agg tcg gaa gcc aca gat gtg aag tcc aca ctg gca       831
Ala Val Arg Met Arg Ser Glu Ala Thr Asp Val Lys Ser Thr Leu Ala
153                158                 163                 168

gaa att gag gac tgg ctt gat aaa tta atg cag ctg act gaa gag cca       879
Glu Ile Glu Asp Trp Leu Asp Lys Leu Met Gln Leu Thr Glu Glu Pro
169                174                 179                 184

cag aac agc atg cct gac atc atc atc tgg atg atc cgg gga gag aag       927
Gln Asn Ser Met Pro Asp Ile Ile Ile Trp Met Ile Arg Gly Glu Lys
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aga ctg gcc tat gca cga att ccc gca cat cag gtc ttg tac tcc acc      975
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201                 206                 211                 216

agt ggt gag aat gca tct gga aaa tac tgt ggg aaa acc caa acc atc     1023
Ser Gly Glu Asn Ala Ser Gly Lys Tyr Cys Gly Lys Thr Gln Thr Ile
217                 222                 227                 232

ttt ctg aag tat cca cag gag aaa aac aac ggg cca aag gtg cct gtg     1071
Phe Leu Lys Tyr Pro Gln Glu Lys Asn Asn Gly Pro Lys Val Pro Val
233                 238                 243                 248

gag ttg cga gtg aac atc tgg cta ggc tta agt gct gtg gag aag aag     1119
Glu Leu Arg Val Asn Ile Trp Leu Gly Leu Ser Ala Val Glu Lys Lys
249                 254                 259                 264

ttt aac agc ttc gca gaa gga act ttc acc gtc ttt gct gaa atg tat     1167
Phe Asn Ser Phe Ala Glu Gly Thr Phe Thr Val Phe Ala Glu Met Tyr
265                 270                 275                 280

gaa aat caa gct ctc atg ttt gga aaa tgg ggt act tct gga tta gta     1215
Glu Asn Gln Ala Leu Met Phe Gly Lys Trp Gly Thr Ser Gly Leu Val
281                 286                 291                 296

gga cgt cat aag ttt tct gat gtc aca gga aaa ata aaa ctc aag agg     1263
Gly Arg His Lys Phe Ser Asp Val Thr Gly Lys Ile Lys Leu Lys Arg
297                 302                 307                 312

gaa ttt ttt ctg cct cca aaa ggc tgg gaa tgg gaa gga gag tgg ata     1311
Glu Phe Phe Leu Pro Pro Lys Gly Trp Glu Trp Glu Gly Glu Trp Ile
313                 318                 323                 328

gtt gat cct gaa aga agc ttg ctg act gag gca gat gca ggt cac acg     1359
Val Asp Pro Glu Arg Ser Leu Leu Thr Glu Ala Asp Ala Gly His Thr
329                 334                 339                 344

gag ttc act gat gaa gtc tat cag aac gag agc cgc tac ccc ggg ggc     1407
Glu Phe Thr Asp Glu Val Tyr Gln Asn Glu Ser Arg Tyr Pro Gly Gly
345                 350                 355                 360

gac tgg aag ccg gcc gag gac acc tac acg gat gcg aac ggc gat aaa     1455
Asp Trp Lys Pro Ala Glu Asp Thr Tyr Thr Asp Ala Asn Gly Asp Lys
361                 366                 371                 376

gca gca tca ccc agc gag ttg act tgt cct cca ggt tgg gaa tgg gaa     1503
Ala Ala Ser Pro Ser Glu Leu Thr Cys Pro Pro Gly Trp Glu Trp Glu
377                 382                 387                 392

gat gat gca tgg tct tat gac ata aat cga gcg gtg gat gag aaa ggc     1551
Asp Asp Ala Trp Ser Tyr Asp Ile Asn Arg Ala Val Asp Glu Lys Gly
393                 398                 403                 408

tgg gaa tat gga atc acc att cct cct gat cat aag ccc aaa tcc tgg     1599
Trp Glu Tyr Gly Ile Thr Ile Pro Pro Asp His Lys Pro Lys Ser Trp
409                 414                 419                 424
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gtt gca gca gag aaa atg tac cac act cat aga cgg cga agg ctg gtc     1647
Val Ala Ala Glu Lys Met Tyr His Thr His Arg Arg Arg Arg Leu Val
425                 430                 435                 440

cga aaa cgc aag aaa gat tta aca cag act gct tca agc acc gca agg     1695
Arg Lys Arg Lys Lys Asp Leu Thr Gln Thr Ala Ser Ser Thr Ala Arg
441                 446                 451                 456

gcc atg gag gaa ttg caa gac caa gag ggc tgg gaa tat gct tct cta     1743
Ala Met Glu Glu Leu Gln Asp Gln Glu Gly Trp Glu Tyr Ala Ser Leu
457                 462                 467                 472

att ggc tgg aaa ttt cac tgg aaa caa cgt agt tca gat acc ttc cgc     1791
Ile Gly Trp Lys Phe His Trp Lys Gln Arg Ser Ser Asp Thr Phe Arg
473                 478                 483                 488

cgc aga cgc tgg agg aga aaa atg gct cct tca gaa aca cat ggt gca     1839
Arg Arg Arg Trp Arg Arg Lys Met Ala Pro Ser Glu Thr His Gly Ala
489                 494                 499                 504

gct gcc atc ttt aaa ctt gaa ggt gcc ctt ggg gca gac act acc gaa     1887
Ala Ala Ile Phe Lys Leu Glu Gly Ala Leu Gly Ala Asp Thr Thr Glu
505                 510                 515                 520

gat ggg gat gag aag agc ctg gag aaa cag aag cac agt gcc acc act     1935
Asp Gly Asp Glu Lys Ser Leu Glu Lys Gln Lys His Ser Ala Thr Thr
521                 526                 531                 536

gtg ttc gga gca aac acc ccc att gtt tcc tgc aat ttt gac aga gac     1983
Val Phe Gly Ala Asn Thr Pro Ile Val Ser Cys Asn Phe Asp Arg Asp
537                 542                 547                 552

tac atc tac cat ctg cgc tgc tat gtc tat caa gcc aga aac ctc ttg     2031
Tyr Ile Tyr His Leu Arg Cys Tyr Val Tyr Gln Ala Arg Asn Leu Leu
553                 558                 563                 568

gct tta gat aag gat agc ttt tca gat cca ttt gct cat atc tgt ttc     2079
Ala Leu Asp Lys Asp Ser Phe Ser Asp Pro Phe Ala His Ile Cys Phe
569                 574                 579                 584

ctc cat cgg agc aaa acc act gag atc atc cat tca acc ctg aat ccc     2127
Leu His Arg Ser Lys Thr Thr Glu Ile Ile His Ser Thr Leu Asn Pro
585                 590                 595                 600

acg tgg gac caa aca att ata ttc gat gaa gtt gaa atc tat ggg gaa     2175
Thr Trp Asp Gln Thr Ile Ile Phe Asp Glu Val Glu Ile Tyr Gly Glu
601                 606                 611                 616

ccc caa aca gtt cta cag aat cca ccc aaa gtt atc atg gaa ctt ttt     2223
Pro Gln Thr Val Leu Gln Asn Pro Pro Lys Val Ile Met Glu Leu Phe
617                 622                 627                 632

gac aat gac caa gtg ggc aaa gat gaa ttt tta gga cga agc att ttc     2271
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761 766 771 776

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793 798 803 808

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Thr Ile Glu Arg Leu Asp Arg Phe Arg Cys Asp Pro Tyr Ala Gly Lys
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 Asp Gly Ser Arg Ile Ile Tyr Gly Gly Arg Asp Tyr Ser Leu Asp Glu
1129                 1134                 1139                 1144

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 Phe Glu Ala Asn Lys Ile Leu His Gln His Leu Gly Ala Pro Glu Glu
1145                 1150                 1155                 1160

 cgg ctt gct ctt cac atc ctc agg act cag ggg ctg gtc cct gag cac      3855
 Arg Leu Ala Leu His Ile Leu Arg Thr Gln Gly Leu Val Pro Glu His
1161                 1166                 1171                 1176

 gtg gaa aca agg act ttg cac agc acc ttc cag ccc aac att tcc aga      3903
 Val Glu Thr Arg Thr Leu His Ser Thr Phe Gln Pro Asn Ile Ser Arg
1177                 1182                 1187                 1192

 tac tac ctg cgt gtg atc atc tgg aac acc aag gac gtt atc ttg gac      3951
 Tyr Tyr Leu Arg Val Ile Ile Trp Asn Thr Lys Asp Val Ile Leu Asp
1193                 1198                 1203                 1208

 gag aaa agc atc aca gga gag gaa atg agt gac atc tac gtc aaa ggc      3999
 Glu Lys Ser Ile Thr Gly Glu Glu Met Ser Asp Ile Tyr Val Lys Gly
1209                 1214                 1219                 1224

 tgg att cct ggc aat gaa gaa aac aaa cag aaa aca gat gtc cgt tac      4047
 Trp Ile Pro Gly Asn Glu Glu Asn Lys Gln Lys Thr Asp Val Arg Tyr
1225                 1230                 1235                 1240

 aga tct ttg gat ggt gaa ggg aat ttt aac tgg cga ttt gtt ttc ccg      4095
 Arg Ser Leu Asp Gly Glu Gly Asn Phe Asn Trp Arg Phe Val Phe Pro
1241                 1246                 1251                 1256

 ttt gac tac ctt cca gcc gaa caa ctc tgt atc gtt gcg aaa aaa gag      4143
 Phe Asp Tyr Leu Pro Ala Glu Gln Leu Cys Ile Val Ala Lys Lys Glu
1257                 1262                 1267                 1272

 cat ttc tgg agt att gac caa acg gaa ttt cga atc cca ccc agg ctg      4191
 His Phe Trp Ser Ile Asp Gln Thr Glu Phe Arg Ile Pro Pro Arg Leu
1273                 1278                 1283                 1288

 atc att cag ata tgg gac aat gac aag ttt tct ctg gat gac tac ttg      4239
 Ile Ile Gln Ile Trp Asp Asn Asp Lys Phe Ser Leu Asp Asp Tyr Leu
1289                 1294                 1299                 1304

 ggt ttc cta gaa ctt gac ttg cgt cac acg atc att cct gca aaa tca      4287
 Gly Phe Leu Glu Leu Asp Leu Arg His Thr Ile Ile Pro Ala Lys Ser
1305                 1310                 1315                 1320

 cca gag aaa tgc aga ttg gac atg att ccg gac ctc aaa gcc atg aac      4335
 Pro Glu Lys Cys Arg Leu Asp Met Ile Pro Asp Leu Lys Ala Met Asn
1321                 1326                 1331                 1336
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ccc ctt aaa gcc aag aca gcc tcc ctc ttt gag cag aag tcc atg aaa      4383
Pro Leu Lys Ala Lys Thr Ala Ser Leu Phe Glu Gln Lys Ser Met Lys
1337                1342                1347                1352

gga tgg tgg cca tgc tac gca gag aaa gat ggc gcc cgc gta atg gct      4431
Gly Trp Trp Pro Cys Tyr Ala Glu Lys Asp Gly Ala Arg Val Met Ala
1353                1358                1363                1368

ggg aaa gtg gag atg aca ttg gaa atc ctc aac gag aag gag gcc gac      4479
Gly Lys Val Glu Met Thr Leu Glu Ile Leu Asn Glu Lys Glu Ala Asp
1369                1374                1379                1384

gag agg cca gcc ggg aag ggg cgg gac gaa ccc aac atg aac ccc aag      4527
Glu Arg Pro Ala Gly Lys Gly Arg Asp Glu Pro Asn Met Asn Pro Lys
1385                1390                1395                1400

ctg gac tta cca aat cga cca gaa acc tcc ttc ctc tgg ttc acc aac      4575
Leu Asp Leu Pro Asn Arg Pro Glu Thr Ser Phe Leu Trp Phe Thr Asn
1401                1406                1411                1416

cca tgc aag acc atg aag ttc atc gtg tgg cgc cgc ttt aag tgg gtc      4623
Pro Cys Lys Thr Met Lys Phe Ile Val Trp Arg Arg Phe Lys Trp Val
1417                1422                1427                1432

atc atc ggc ttg ctg ttc ctg ctt atc ctg ctg ctc ttc gtg gcc gtg      4671
Ile Ile Gly Leu Leu Phe Leu Leu Ile Leu Leu Leu Phe Val Ala Val
1433                1438                1443                1448

ctc ctc tac tct ttg ccg aac tat ttg tca atg aag att gta aag cca      4719
Leu Leu Tyr Ser Leu Pro Asn Tyr Leu Ser Met Lys Ile Val Lys Pro
1449                1454                1459                1464

aat gtg taa caaaggc aaaggcttca tttcaagagt catccagcaa tgagagaatc      4775
Asn Val  *
1465

ctgcctctgt agaccaacat ccagtgtgat tttgtgtctg agaccacacc ccagtagcag    4835

gttacgccat gtcaccgagc cccattgatt cccagagggt cttagtcctg gaaagtcagg    4895

ccaacaagca acgtttgcat catgttatct cttaagtatt aaaagtttta ttttctaaag    4955

tttaaatcat gtttttcaaa atatttttca aggtggctgg ttccatttaa aaatcatctt    5015

tttatatgtg tcttcggttc tagacttcag cttttggaaa ttgctaaata gaattcaaaa    5075

atctctgcat cctgaggtga tatacttcat atttgtaatc aactgaaaga gctgtgcatt    5135

ataaaatcag ttagaatagt tagaacaatt cttatttatg cccacaacca ttgctatatt    5195

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ttcccagacc cctatgatga gctgaatact ggaaaggggg aaggagttgc ctacagaggc     180

aggatcttgg ttgaattagc cacttttctt gagaagacac caccagataa aaagcttgag     240

cccatttcaa atgatgacct gctggttgtt gagaaatacc agcgaaggcg gaagtacagc     300

ctgtctgccg tgtttcattc agccacc    atg ttg caa gat gtt ggt gag gcc      351
                                 Met Leu Gln Asp Val Gly Glu Ala
                                  1               5

att cag ttt gaa gtc agc att ggg aac tat ggc aac aag ttt gac acc       399
Ile Gln Phe Glu Val Ser Ile Gly Asn Tyr Gly Asn Lys Phe Asp Thr
  9                 14                  19                  24

acc tgt aag cct ttg gca tca aca act cag tac agc cgt gct gta ttt       447
Thr Cys Lys Pro Leu Ala Ser Thr Thr Gln Tyr Ser Arg Ala Val Phe
 25                 30                  35                  40

gat ggc aac tac tat tat tac ttg cct tgg gcc cac acc aag cca gtt       495
Asp Gly Asn Tyr Tyr Tyr Tyr Leu Pro Trp Ala His Thr Lys Pro Val
 41                 46                  51                  56

gtt acc ctg act tca tac tgg gag gat att agt cat cgc ctg gat gcg       543
Val Thr Leu Thr Ser Tyr Trp Glu Asp Ile Ser His Arg Leu Asp Ala
 57                 62                  67                  72

gtg aac act ctc cta gct atg gca gaa cgg ctg caa aca aat ata gaa       591
Val Asn Thr Leu Leu Ala Met Ala Glu Arg Leu Gln Thr Asn Ile Glu
 73                 78                  83                  88

gct cta aaa tca ggg ata caa ggt aaa att cct gca aac cag ctg gct       639
Ala Leu Lys Ser Gly Ile Gln Gly Lys Ile Pro Ala Asn Gln Leu Ala
 89                 94                  99                  104

gaa ttg tgg ctg aag ctg ata gat gaa gtt ata gaa gac acg aga tac       687
Glu Leu Trp Leu Lys Leu Ile Asp Glu Val Ile Glu Asp Thr Arg Tyr
105                 110                 115                 120

acg ttg cct ctc aca gaa gga aaa gcc aac gtc aca gtt ctc gat act       735
Thr Leu Pro Leu Thr Glu Gly Lys Ala Asn Val Thr Val Leu Asp Thr
121                 126                 131                 136
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cag atc cga aag ctg cgg tcc agg tct ctc tcc caa ata cat gag gcg      783
Gln Ile Arg Lys Leu Arg Ser Arg Ser Leu Ser Gln Ile His Glu Ala
137                 142                 147                 152

gct gtg agg atg agg tcg gaa gcc aca gat gtg aag tcc aca ctg gca      831
Ala Val Arg Met Arg Ser Glu Ala Thr Asp Val Lys Ser Thr Leu Ala
153                 158                 163                 168

gaa att gag gac tgg ctt gat aaa tta atg cag ctg act gaa gag cca      879
Glu Ile Glu Asp Trp Leu Asp Lys Leu Met Gln Leu Thr Glu Glu Pro
169                 174                 179                 184

cag aac agc atg cct gac atc atc atc tgg atg atc cgg gga gag aag      927
Gln Asn Ser Met Pro Asp Ile Ile Ile Trp Met Ile Arg Gly Glu Lys
185                 190                 195                 200

aga ctg gcc tat gca cga att ccc gca cat cag gtc ttg tac tcc acc      975
Arg Leu Ala Tyr Ala Arg Ile Pro Ala His Gln Val Leu Tyr Ser Thr
201                 206                 211                 216

agt ggt gag aat gca tct gga aaa tac tgt ggg aaa acc caa acc atc     1023
Ser Gly Glu Asn Ala Ser Gly Lys Tyr Cys Gly Lys Thr Gln Thr Ile
217                 222                 227                 232

ttt ctg aag tat cca cag gag aaa aac aac ggg cca aag gtg cct gtg     1071
Phe Leu Lys Tyr Pro Gln Glu Lys Asn Asn Gly Pro Lys Val Pro Val
233                 238                 243                 248

gag ttg cga gtg aac atc tgg cta ggc tta agt gct gtg gag aag aag     1119
Glu Leu Arg Val Asn Ile Trp Leu Gly Leu Ser Ala Val Glu Lys Lys
249                 254                 259                 264

ttt aac agc ttc gca gaa gga act ttc acc gtc ttt gct gaa atg tat     1167
Phe Asn Ser Phe Ala Glu Gly Thr Phe Thr Val Phe Ala Glu Met Tyr
265                 270                 275                 280

gaa aat caa gct ctc atg ttt gga aaa tgg ggt act tct gga tta gta     1215
Glu Asn Gln Ala Leu Met Phe Gly Lys Trp Gly Thr Ser Gly Leu Val
281                 286                 291                 296

gga cgt cat aag ttt tct gat gtc aca gga aaa ata aaa ctc aag agg     1263
Gly Arg His Lys Phe Ser Asp Val Thr Gly Lys Ile Lys Leu Lys Arg
297                 302                 307                 312

gaa ttt ttt ctg cct cca aaa ggc tgg gaa tgg gaa gga gag tgg ata     1311
Glu Phe Phe Leu Pro Pro Lys Gly Trp Glu Trp Glu Gly Glu Trp Ile
313                 318                 323                 328

gtt gat cct gaa aga agc ttg ctg act gag gca gat gca ggt cac acg     1359
Val Asp Pro Glu Arg Ser Leu Leu Thr Glu Ala Asp Ala Gly His Thr
329                 334                 339                 344

gag ttc act gat gaa gtc tat cag aac gag agc cgc tac ccc ggg ggc     1407
Glu Phe Thr Asp Glu Val Tyr Gln Asn Glu Ser Arg Tyr Pro Gly Gly
345                 350                 355                 360

gac tgg aag ccg gcc gag gac acc tac acg gat gcg aac ggc gat aaa     1455
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Asp Trp Lys Pro Ala Glu Asp Thr Tyr Thr Asp Ala Asn Gly Asp Lys
361                 366                 371                 376

gca gca tca ccc agc gag ttg act tgt cct cca ggt tgg gaa tgg gaa      1503
Ala Ala Ser Pro Ser Glu Leu Thr Cys Pro Pro Gly Trp Glu Trp Glu
377                 382                 387                 392

gat gat gca tgg tct tat gac ata aat cga gcg gtg gat gag aaa ggc      1551
Asp Asp Ala Trp Ser Tyr Asp Ile Asn Arg Ala Val Asp Glu Lys Gly
393                 398                 403                 408

tgg gaa tat gga atc acc att cct cct gat cat aag ccc aaa tcc tgg      1599
Trp Glu Tyr Gly Ile Thr Ile Pro Pro Asp His Lys Pro Lys Ser Trp
409                 414                 419                 424

gtt gca gca gag aaa atg tac cac act cat aga cgg cga agg ctg gtc      1647
Val Ala Ala Glu Lys Met Tyr His Thr His Arg Arg Arg Arg Leu Val
425                 430                 435                 440

cga aaa cgc aag aaa gat tta aca cag act gct tca agc acc gca agg      1695
Arg Lys Arg Lys Lys Asp Leu Thr Gln Thr Ala Ser Ser Thr Ala Arg
441                 446                 451                 456

gcc atg gag gaa ttg caa gac caa gag ggc tgg gaa tat gct tct cta      1743
Ala Met Glu Glu Leu Gln Asp Gln Glu Gly Trp Glu Tyr Ala Ser Leu
457                 462                 467                 472

att ggc tgg aaa ttt cac tgg aaa caa cgt agt tca gat acc ttc cgc      1791
Ile Gly Trp Lys Phe His Trp Lys Gln Arg Ser Ser Asp Thr Phe Arg
473                 478                 483                 488

cgc aga cgc tgg agg aga aaa atg gct cct tca gaa aca cat ggt gca      1839
Arg Arg Arg Trp Arg Arg Lys Met Ala Pro Ser Glu Thr His Gly Ala
489                 494                 499                 504

gct gcc atc ttt aaa ctt gaa ggt gcc ctt ggg gca gac act acc gaa      1887
Ala Ala Ile Phe Lys Leu Glu Gly Ala Leu Gly Ala Asp Thr Thr Glu
505                 510                 515                 520

gat ggg gat gag aag agc ctg gag aaa cag aag cac agt gcc acc act      1935
Asp Gly Asp Glu Lys Ser Leu Glu Lys Gln Lys His Ser Ala Thr Thr
521                 526                 531                 536

gtg ttc gga gca aac acc ccc att gtt tcc tgc aat ttt gac aga gac      1983
Val Phe Gly Ala Asn Thr Pro Ile Val Ser Cys Asn Phe Asp Arg Asp
537                 542                 547                 552

tac atc tac cat ctg cgc tgc tat gtc tat caa gcc aga aac ctc ttg      2031
Tyr Ile Tyr His Leu Arg Cys Tyr Val Tyr Gln Ala Arg Asn Leu Leu
553                 558                 563                 568

gct tta gat aag gat agc ttt tca gat cca ttt gct cat atc tgt ttc      2079
Ala Leu Asp Lys Asp Ser Phe Ser Asp Pro Phe Ala His Ile Cys Phe
569                 574                 579                 584

ctc cat cgg agc aaa acc act gag atc atc cat tca acc ctg aat ccc      2127
Leu His Arg Ser Lys Thr Thr Glu Ile Ile His Ser Thr Leu Asn Pro
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585                 590                 595                 600

acg tgg gac caa aca att ata ttc gat gaa gtt gaa atc tat ggg gaa      2175
Thr Trp Asp Gln Thr Ile Ile Phe Asp Glu Val Glu Ile Tyr Gly Glu
601                 606                 611                 616

ccc caa aca gtt cta cag aat cca ccc aaa gtt atc atg gaa ctt ttt      2223
Pro Gln Thr Val Leu Gln Asn Pro Pro Lys Val Ile Met Glu Leu Phe
617                 622                 627                 632

gac aat gac caa gtg ggc aaa gat gaa ttt tta gga cga agc att ttc      2271
Asp Asn Asp Gln Val Gly Lys Asp Glu Phe Leu Gly Arg Ser Ile Phe
633                 638                 643                 648

tct cct gtg gtg aaa ctg aac tca gaa atg gac atc aca ccc aaa ctt      2319
Ser Pro Val Val Lys Leu Asn Ser Glu Met Asp Ile Thr Pro Lys Leu
649                 654                 659                 664

ctc tgg cac cca gta atg aat gga gac aaa gcc tgc ggg gat gtt ctt      2367
Leu Trp His Pro Val Met Asn Gly Asp Lys Ala Cys Gly Asp Val Leu
665                 670                 675                 680

gta act gca gag ctg att ctg agg ggc aag gat ggc tcc aac ctt ccc      2415
Val Thr Ala Glu Leu Ile Leu Arg Gly Lys Asp Gly Ser Asn Leu Pro
681                 686                 691                 696

att ctt ccc cct caa agg gcg cca aat cta tac atg gtc ccc cag ggg      2463
Ile Leu Pro Pro Gln Arg Ala Pro Asn Leu Tyr Met Val Pro Gln Gly
697                 702                 707                 712

atc agg cct gtg gtc cag ctc act gcc att gag att cta gct tgg ggc      2511
Ile Arg Pro Val Val Gln Leu Thr Ala Ile Glu Ile Leu Ala Trp Gly
713                 718                 723                 728

tta aga aat atg aaa aac ttc cag atg gct tct atc aca tcc ccc agt      2559
Leu Arg Asn Met Lys Asn Phe Gln Met Ala Ser Ile Thr Ser Pro Ser
729                 734                 739                 744

ctt gtt gtg gag tgt gga gga gaa agg gtg gaa tcg gtg gtg atc aaa      2607
Leu Val Val Glu Cys Gly Gly Glu Arg Val Glu Ser Val Val Ile Lys
745                 750                 755                 760

aac ctt aag aag aca ccc aac ttt cca agt tct gtt ctc ttc atg aaa      2655
Asn Leu Lys Lys Thr Pro Asn Phe Pro Ser Ser Val Leu Phe Met Lys
761                 766                 771                 776

gtg ttc ttg ccc aag gag gaa ttg tac atg ccc cca ctg gtg atc aag      2703
Val Phe Leu Pro Lys Glu Glu Leu Tyr Met Pro Pro Leu Val Ile Lys
777                 782                 787                 792

gtc atc gac cac agg cag ttt ggg cgg aag cct gtc gta ggc cag tgc      2751
Val Ile Asp His Arg Gln Phe Gly Arg Lys Pro Val Val Gly Gln Cys
793                 798                 803                 808

acc atc gag cgc ctg gat cgc ttt cgc tgt gac cct tat gca ggg aaa      2799
Thr Ile Glu Arg Leu Asp Arg Phe Arg Cys Asp Pro Tyr Ala Gly Lys
809                 814                 819                 824
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